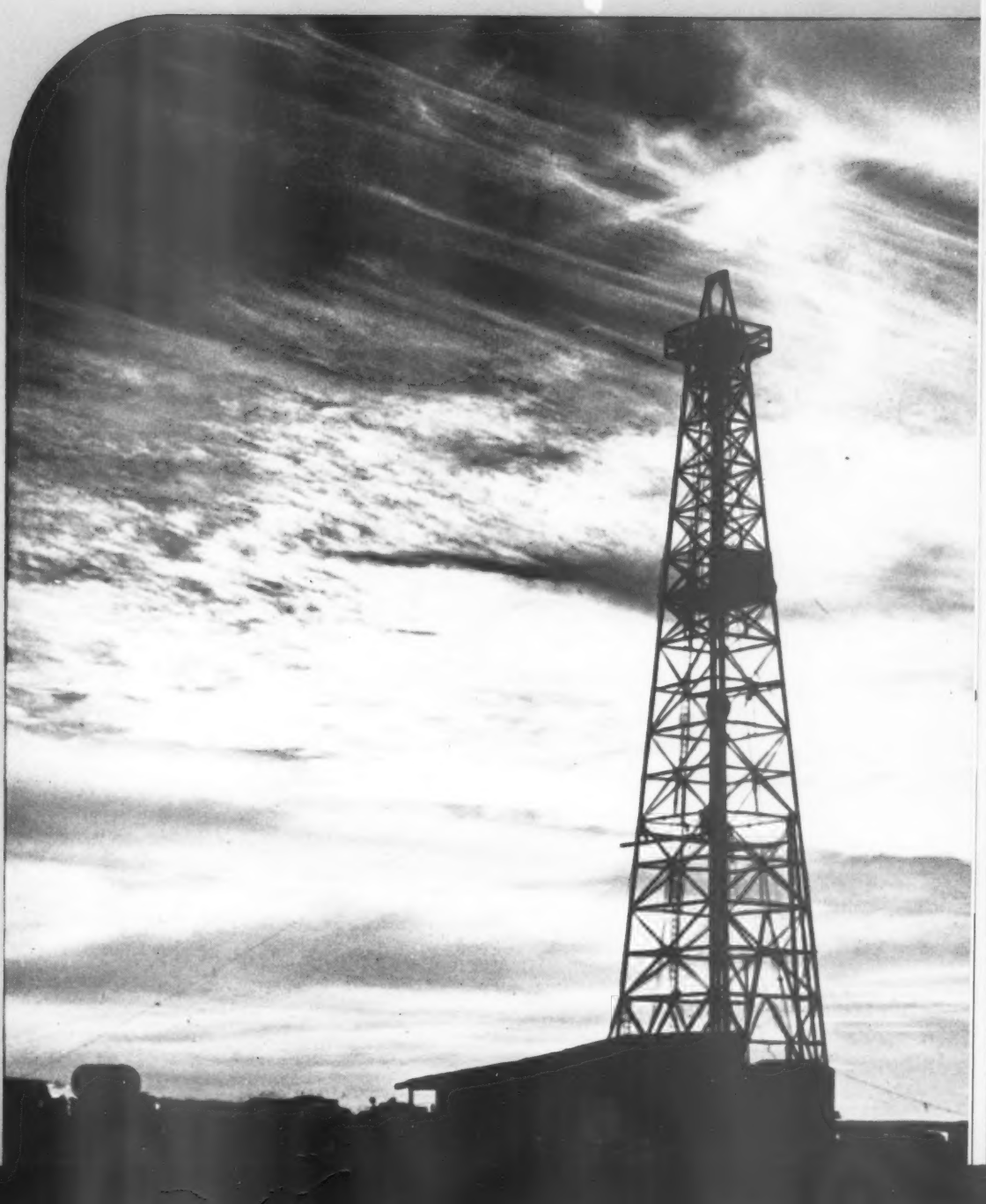
AMERICAN GAS ASSOCIATION

Monthly



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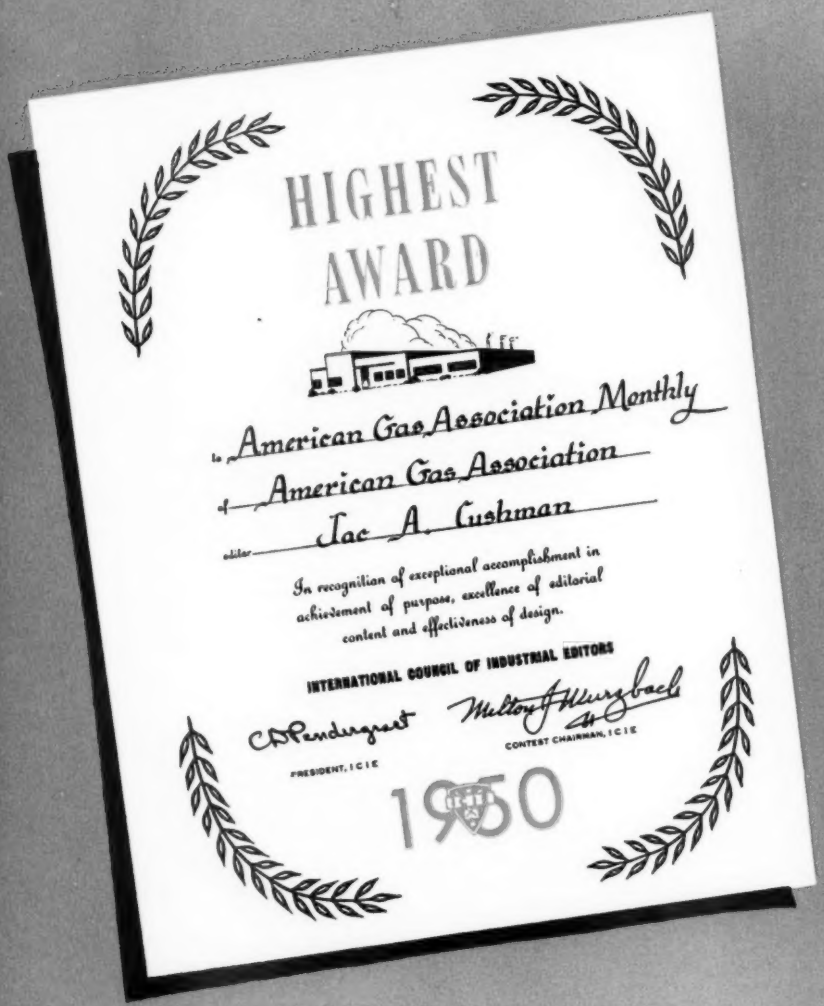
A.G.A. Monthly wins fourth international award


HIGHEST
AWARD
to American Gas Association Monthly
of American Gas Association
editor Jac A. Cushman
In recognition of exceptional accomplishment in achievement of purpose, excellence of editorial content and effectiveness of design.
INTERNATIONAL COUNCIL OF INDUSTRIAL EDITORS
PRESIDENT, I C I E
CONTEST CHAIRMAN, I C I E
1950

● American Gas Association Monthly has received a top award in the annual contest sponsored by International Council of Industrial Editors. Some 657 industrial publications from the United States, Canada and England were entered in the competition and A.G.A. Monthly was one of seven "highest award" winners from New York State.

A wide variety of publications, including company-sponsored employee, stockholder, customer, dealer, and association magazines vied for honors in the international competition. Publications were rated on the basis of accomplishment of purpose, editorial achievement, appearance, typography, engraving and presswork. A total of 60 publications representing 18 states, the District of Columbia, and two Canadian provinces received top awards for scoring 90 or more out of a possible 100 points.

Similar awards for achievement were received by the Monthly when it entered the industrial editors' contest on three previous occasions —— in 1945 and 1946, and again in 1949.

This month's cover: Drilling for natural gas beneath a Texas sky. Photograph by Bubley, Standard Oil Co. of New Jersey

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OUR future is in our own hands! This thought by Lyle C. Harvey was seldom more basic and true than it is today. . . . First of all, the natural gas "giant" has brought the entire industry into the white light of national prominence. There is consequently a pressing need, as Chairman D. A. Hulcy noted at the natural gas meeting, for better public understanding of our industry and its problems. . . . Research is described this month as insurance against obsolescence and slow death. Reports on the domestic research and utilization conference show how this insurance is paying off in ever better gas appliances for the public. The infant research fraternity of manufacturer and utility technicians now must be nurtured and weaned. . . . Our future depends also upon more and more effective promotion, both locally and nationally. Already the warning signals are flashing in several areas. Guy T. Henry finds, for instance, that in the domestic cooking and water heating fields our competitors have done a better selling job than we have. . . . Without doubt, the future is in our own hands! Every available idea, every dollar and energy must be marshalled behind the PAR Plan to win the battle which is now joined. We must rout our competition at the outer walls of our fortress.

JAMES M. BEALL
MANAGER, PUBLICATIONS

JAC A. CUSHMAN
EDITOR

RICHARD F. MULLIGAN
ART SUPERVISOR

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CONTENTS FOR JUNE 1950

FEATURES

NOTES AND QUOTES FROM A. G. A. SPRING CONFERENCES . . . 2
NATURAL GAS GIANT STEPS OUT IN SEVEN-LEAGUE BOOTS . . . 4
GAS LINES MAKE GOOD HEADLINES—by Hugh H. Cuthrell . . . 9
150,000-MILE APPLIANCE PATROL 12
RESEARCH—OUR FOURTH DIMENSION—by John W. West, Jr. . . . 15
EXECUTIVES TALLY DOMESTIC RESEARCH GAINS 18
HOW WE CONTROL GAS MIXING—by W. H. Isaacs and R. B. Paquette 21
COSTS AND RATES—SIAMESE TWINS?—by B. C. Adams, Guy T. Henry and W. J. Herrman 23

SECTIONS

COLLECTIVE CONTRACTS OR CONFLICTS? (ACCOUNTING)—by E. Wight Bakke 27
SCHOOL BELL DRAWS COMMERCIAL GAS MEN 30
FOUNDRYMEN LEARN STORY OF GAS 32
PRODUCTION MEN IN KEY ROLE 33
CONFERENCE TO SPOTLIGHT SALES (RESIDENTIAL) 39

DEPARTMENTS

INDUSTRIAL RELATIONS ROUND-TABLE 40
INDUSTRY NEWS 42
OBITUARY 51
PERSONAL AND OTHERWISE 52
ASSOCIATED ORGANIZATION ACTIVITIES 57
NEW A. G. A. MEMBERS 58
CONVENTION CALENDAR 59
PERSONNEL SERVICE 60

THE MONTHLY IS INDEXED BY THE INDUSTRIAL ARTS INDEX

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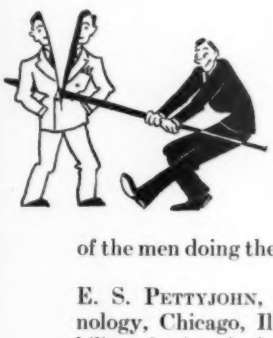
Notes and quotes fro.G.

A.G.A. PRODUCTION AND CHEMICAL CONFERENCE

J. W. BLATCHFORD, E. I. du Pont de Nemours & Co., Inc., Charleston, West Virginia—"Use of oxygen in coke gasification is advantageous from the standpoint of capacity, fuel utilization and maintenance of generating equipment. There do not appear to be insurmountable restrictions within reasonable limits in either the quality of fuel or the type of apparatus employed."

FRANK D. HOWELL, *Dominion Natural Gas Co., Ltd., Brantford, Ontario, Canada—Experience shows, according to this speaker, that both high Btu oil gas and propane-air can be used successfully as 100 percent replacement of natural gas sendout. However, it is necessary to keep in mind, he said, that the new gases differ from natural gas in odor and burning characteristics.*



G. A. S. COOPER, Public Service Electric & Gas Co., Newark, New Jersey—". . . the executive who side-steps safety and tries to make it a complete department, separate from his operating department, is trying to divide a man in two parts. . . . The real safety engineer happens to be the boss of the men doing the work."

E. S. PETTYJOHN, director, Institute of Gas Technology, Chicago, Ill., again emphasized "the desirability of using the heavy residual oils properly selected on the basis of the C/H ratio—that is, within the range of 7.3—7.7 to obtain the lowest enriching value cost in carburetted water gas operation."

T. L. ROBEY, secretary, A.G.A. General Research Planning Committee—". . . research is the only form of insurance against getting in a rut, against obsolescence, against slow death. Although the advent of natural gas is a tremendous asset which solves some problems, new ones are introduced. I am convinced that for the long-term growth of the industry we need, as never before, this form of insurance—research."

J. S. HURD, Public Service Electric & Gas Co., Nixon, N. J., reports that plant changeover from a water gas to a 100 percent natural reforming operation has produced the following benefits: "(1) It has reduced the number of so-called dirty jobs that the men have to do. General plant cleanliness has improved and with it the morale of the men; (2) it has practically doubled the plant gas-making capacity; (3) last but not least, there has been a substantial reduction in production costs."

BUREAU OF MINES *representatives presented for the first time a comprehensive picture on three years of research and development on production of synthesis gas from coal. Of particular interest to the gas industry was the report on an improved method—sensitive, accurate and fast—for determining organic sulfur.*

HUGH E. FERGUSON, The Peoples Gas Light & Coke Co., Chicago, Illinois—"For the chemical itemization provided by an ordinary gas analysis to be of practical value, it should be converted to a 'proximate' analysis—i.e., to an analysis indicating the proportions and natures of the component parts of the gas—water gas, oil gas, producer or blast gas, etc. Proximate analyses can provide clearer and more dependable information concerning the acceptability of the gas—information which can also be used in deciding how to improve production operations."

H. EMERSON THOMAS, H. Emerson Thomas & Associates, Westfield, N. J., speaking on safety in operation of LP-gas plants noted that: (1) Safety is a distinct part of operations; (2) safety is tied into a sound, profitable financial structure; (3) the value of careful employees and training them well is paramount to having safety; (4) there is need for a completely engineered plant for safety as well as operation; (5) Pamphlet 59 (National Fire Protection Association and National Board of Fire Underwriters) should be used as a "bible" for basic standards of installation and operation.

A.G.A. DOMESTIC GAS RESEARCH AND UTILIZATION CONFERENCE

JOHN W. WEST, JR., *A.G.A. assistant managing director and secretary, A.G.A. PAR Committee*—". . . *the full meaning of this research program to the utilities as a force for industry progress and to appliance customers and prospects as a force for better gas service, depends primarily upon the future use of this research data by the producers of appliances.*"

C. GEORGE SEGELER, A.G.A. engineer of utilization (speaking on "The Impact of Public Housing Regulations on Gas Appliance Usage)—". . . now is the time to educate our local housing authorities by placing

A.G.A. spring conferences

before them plenty of data—unbiased, comprehensive, accurate, and local." Mr. Segeler also outlined a second method of approach: "If the gas companies will continue to furnish convincing new information which will enable us to present a strong case to PHA in Washington, we may be able to secure further revisions of Bulletin LR-11, in which the data will be more in line with the facts as we see them."

JOHN R. BECCIA, *The Connecticut Light & Power Co., Waterbury, Connecticut*—". . . *research bulletins and other bulletins now made available by A.G.A. . . . contain information that will alleviate many of our service problems. The bulletins should be referred to more frequently and the conclusions of the bulletins put into practice.*"

FRANK H. ADAMS, president, Surface Combustion Corp., Toledo, Ohio, believes that the research partnership under the PAR Plan places at least two responsibilities on the manufacturers: (1) Data documented in more than 70 A.G.A. research reports should be used in the building of better gas appliances; (2) closest thought should be given to the type of research which should be undertaken by the Association.

EUGENE D. MILENER, *A.G.A. coordinator of utilization research*—"*VIC is the name of the three things that are always present and must be dealt with whenever a gas appliance is being designed, installed, used, or serviced. VIC is Venting, Ignition, and Combustion. VIC is a strong ally of gas appliance and utilization men—or VIC can sink us.*"

W. B. KIRK, chief research engineer, A.G.A. Laboratories—". . . manufacturer and utility company representatives on the Domestic Gas Research Committee and its several advisory groups have contributed unstintingly of their time, talents, and effort to this program of research. With company blessing and financial support they frequently have divorced themselves from company policies and individual preferences to advance utilization of gas as a fuel. . . .

". . . it is not good enough for the rest of us to sit back and applaud these efforts on our behalf. If the gas industry is to continue its proper place in the field of utility service, we must all contribute our thinking to the selection and solving of utilization problems."

A.G.A. NATURAL GAS SPRING MEETING

HUGH H. CUTHRELL, *president, American Gas Association*—"*The best answer to threats of socialization is the guarantee that our operation is at maximum efficiency and in the public interest.*"

WESLEY E. DISNEY, general counsel, Independent Natural Gas Association—". . . right now you face up to the dangers of controls and regulation of all fuels under a Fuel Administration, the great tremendous movement to the nationalization of utilities and natural resources. I advise that you begin now to educate public opinion, not only in your own interest, but for the general welfare."

N. C. MCGOWEN, chairman, A.G.A. Committee on Natural Gas Reserves—". . . the Committee on Natural Gas Reserves finds that the nation's proved reserves on December 31, 1946 stood at 180.4 trillion cubic feet. Its studies show that in spite of withdrawals of 22.7 trillion cubic feet during the past four years, our reserves have increased by 32.6 trillion cubic feet. . . .

"Most of the country's reserves are in the Southwestern and Southern states of New Mexico, Texas, Oklahoma, Arkansas, Louisiana and Mississippi, which have 82 percent of the total. Texas and Louisiana together account for 70 percent of the total reserves and it is in these two states that most of the gas was found in 1949. . . ."

W. C. MOSTELLER, Southern Counties Gas Co., Los Angeles, California—"Computations indicated that line pack storage could be built into the Texas-Pacific pipeline system at a fraction of the cost of an equivalent amount of conventional above-ground low pressure or high pressure tank holders of the type which had previously been used for daily load equation in Southern California. . . . The subsequent operation has confirmed that transmission line type storage is satisfactory and economical."

D. A. HULCY, *chairman, A.G.A. Natural Gas Department, and vice-president, American Gas Association*—"*. . . the tremendous advancement of the natural gas industry has spotlighted it for political attacks. Our program for the future must intensify our efforts with respect to a better public understanding of the industry and its many problems.*"

Natural gas giant steps out

Increased responsibilities and opportunities accompanying the spectacular growth of the natural gas industry were stressed at the Spring Meeting of the Association's Natural Gas Department in Tulsa, Okla., May 8 and 9. More than 800 delegates were brought up to date on the changing character of the gas industry and its mounting public relations problems.

Opening the conference, D. A. Hulcy, chairman, Natural Gas Department, and vice-president, A. G. A. described natural gas as a fuel with a future. It now supplies 19.5 percent of the nation's fuel needs, he said, as compared with 11 percent in 1941. Tremendous expansion of the industry in the past few years, Mr. Hulcy continued, has been spotlighted by the extension of pipeline networks to the Midwest, Northeast and Pacific Coast. Mr. Hulcy is president, Lone Star Gas Co., Dallas, Texas.

Between 1942 and February 1, 1950, Federal Power Commission has approved certificates covering construction of 30,138 miles of line, with a daily rated capacity of 10.6 billion cubic feet, or 3.4 trillion cubic feet a year, Mr. Hulcy pointed out. Applications are pending before FPC for about 13,700 miles of line, he added. The effect of the additional feasible lines on the production of natural gas in this country, Mr. Hulcy estimated, would be an annual increase of about one trillion cubic feet.

This tremendous advancement of the natural gas industry, he declared, "has spotlighted it for political attacks, and our program for the future must intensify our efforts with respect to a better public understanding of the industry and its many problems."

Responsibilities of the natural gas industry were further emphasized at the second general session by Hugh H. Cuthrell, president, A. G. A., and vice-president, The Brooklyn Union Gas Company. Mr. Cuthrell's forthright address entitled "Gas Lines Makes Headlines," warned the industry to keep constantly in mind the fact that "any unsound pipeline expansion or any allocation or pricing of gas contrary to

▲ Official welcome: D. A. Hulcy (left), chairman, A.G.A. Natural Gas Department, chatting with Joseph Bowes (center), president, Oklahoma Natural Gas Co.; Mayor Stoner, Tulsa

▶ C. E. Bennett (left), president, The Manufacturers Light & Heat Co.; Frank H. Adams, president, Surface Combustion Corp.; Irving K. Peck, Manufacturers Light & Heat; R. G. Griswold, Cities Service Corporation

even-league boots

the general good, will ultimately react to the detriment of the gas industry."

"The gas industry is in a transitional period of far more importance today than that of the early postwar period," Mr. Cuthrell noted. "Large segments of our customers are being converted to natural gas or to a gas enriched by natural gas." He pointed out that in 1939 nearly one half of the gas industry's customers received straight manufactured gas, whereas ten years later in 1949 this figure had declined to 35 percent, with 65 percent receiving natural or mixed gas. When present expansion plans are completed, he continued, "companies supplying more than 95 percent of all gas customers will be serving natural gas or a mixed gas."

In these times of change, Mr. Cuthrell called for the industry to support sound conservation and the best techniques for developing natural gas fields. "We can save a lot of future sorrow," he declared, "through sound business statesmanship today. The best answer to threats of socialization is the guarantee that our operation is at maximum efficiency and in the public interest." (Mr. Cuthrell's address is reproduced elsewhere in this issue of the MONTHLY.)

Underlining the threat of a so-called planned economy and nationalization of industries, Wesley E. Disney, general counsel, Independent Natural Gas Association, speaking at the first general session, traced implications inherent to the Kerr bill veto and other recent proposals to extend the federal regulatory power. He charged that FPC had reversed its stand on the Kerr bill within a year. "Whether we can achieve and maintain political and economic stability by such performances remains to be seen," he added.

"This attitude on the part of a commission which holds in its hands the economic fate of enormous businesses," he declared, "would indicate the necessity for a return to the principle upon which this government was founded."

A powerful school of official thought in Washington, mostly well intentioned, contemplates the establishment of a federal authority to control all fuels, Mr. Disney asserted. The creation of such an authority, he said, "opens the door to the practical development of a spread of the philosophy of regulation and control of other industries."

"The power of the federal system," Mr. Disney continued, "is so diffused among the people that it is a spawning ground for regulation and control of all activities of the private and corporate citizen. . . . Nationalization approaches stealthily—not by name or stated purpose or avowed design. The first target for its application is usually the public utilities and those businesses having a quasi-public utility status. Little by little, by a nibbling process, nationalization may and usually does approach without clear warning."

To stem the tide of nationalization, Mr. Disney recommended the achievement as soon as possible of improved public relations. "It is never too late to educate the public. The public responds to the truth," he concluded.

Earlier at this session, George H.

◀ Arthur F. Bridge (left), chairman, A.G.A. Laboratories Managing Committee; E. S. Pettyjohn (center), director, IGT; Paul R. Taylor, New York, chairman, natural gas program committee

R. W. Hendee (left), president, Colorado Interstate Gas Co.; Elmer F. Schmidt, chairman, A.G.A. Technical and Research Committee; J. F. Merriam (right), Northern Natural Gas Company ▼

◀ Get-together between sessions: Walter C. Beckjord (left), president, The Cincinnati Gas & Electric Co.; Frank C. Smith, chairman, A.G.A. General Promotional Planning Committee, and H. Leigh Whitelaw, managing director of GAMA

▲ E. D. Clutter (left), and A. B. Lauderbaugh (third from left), The Manufacturers Light & Heat Co., with Burt R. Bay (second from left), president, Northern Natural Gas Co.; E. F. Barrett, president, Long Island Lighting

▲ N. C. McGowen, Chairman, A. G. A. Committee on Natural Gas Reserves

Stoner, Mayor of Tulsa, welcomed the delegates to the southwest territory which, he said, is the fountain head of the natural gas industry.

A feature of the opening meeting was the presentation of a series of progress reports on PAR-sponsored A. G. A. research projects. This part of the program was led by E. F. Schmidt, chairman, A. G. A. Technical and Research Committee, and vice-president, Lone Star Gas Company.

High point of the discussion was a report by W. M. Deaton, U. S. Bureau of Mines, Amarillo, on the development of a water vapor recorder which was displayed during the conference. Satisfactory operation in natural gas under pressure was reported. One recorder has been used for more than a year in pipeline installations handling gas that has been dried in a dry-desiccant-type dehydration plant. Recently the Bureau, which conducted the tests, successfully used the recorder on gas that had been dried in a diethylene-glycol-type plant.

J. W. Ferguson and P. V. Mullins, U. S. Bureau of Mines, Amarillo, respectively described progress on the pipeline flow investigation and the nitrogen removal project. Professor S. R. Beitler, Ohio State University, reported on segmental and eccentric orifice studies and H. D. Hancock, president, Gas Advisers, Inc., New York, reviewed the status of revisions of Code for Pressure Piping (ASA B31). Reports were made by R. G. Strong, Natural Gas Pipeline Co. of America, on increased design stresses and gas pipeline field welding practices.

Considerable interest was shown in the project on orifice installation requirements by H. S. Bean, National Bureau of Standards, Washington, D. C. This joint A. G. A. ASME project is a continuation of published Report No. 2. of the Gas Measurement Committee.

Other reports were given by L. T. Potter, Lone Star Gas Co., and Dr. J. D. Parent, Institute of Gas Technology. Mr. Potter discussed problems involved in the production of gas from condensate wells. Dr. Parent outlined IGT studies of pressure, volume, temperature relationships of methane-nitrogen mixtures toward the development of engineering design factors for liquid storage and nitrogen removal plants.

A three-way discussion of the relation between higher operating costs and rates, presented at the second general session, brought out a valuable fund of ideas and experiences. B. C. Adams, president, The Gas Service Co., Kansas City, clearly defined the problem of increased costs from the management viewpoint.

Citing his own company as an example, Mr. Adams pointed out that after fixed charges for purchased gas, wages, taxes, etc., are taken out of the

◀ Mark V. Burlingame (left), Natural Gas Pipeline Co. of America, chatting between natural gas sessions with Erick Larson, Commonwealth Natural Gas Company

Meeting of Natural Gas Managing and Advisory Committees at which C. E. Bennett, Pittsburgh, was named chairman of Department's Program Committee for A.G.A. Convention. Group also discussed natural gas research

George F. Mitchell, vice-president, A.G.A.; Dean H. Mitchell, president, Northern Indiana Public Service

W. C. Mosteller (left), Los Angeles, and E. Paul Wilkinson, Dallas

F. A. Hough (left), chairman, A.G.A. Transmission Committee, with J. L. Oberseider, Southern California Gas Co., and H. D. Hancock, president, Gas Advisers, Inc.

revenue dollar, management has less than 16 cents left with which to effect economies, carry on vital promotional activities, and pay dividends. He questioned whether operational costs could be reduced substantially if the present trends continue.

Contrasting an aggressive industry with a complacent industry, Guy T. Henry, president, Central Indiana Gas Co., Muncie, made an effective contribution on the effect of higher costs on operations. "Management," he declared, "is passing the stage of rule-of-thumb policies, and in the future profits will be made by men with minds and methods."

Foresighted policy

He advocated a foresighted policy of attracting more new, educated personnel to replace retiring executives, superintendents, foremen and workmen. Pointing to the fact that since the war the electric industry has trained 38,000 retail salesmen as compared with 2,150 for the gas industry, he said it is high time to build a sales organization worthy of the name.

The third speaker on the panel, W. J. Herrman, vice-president, Commonwealth Services Inc., New York, urged the industry to adopt modernized class rates which reasonably conform to class costs and the competitive value of the service rendered. As an example, he suggested the possibility of a fixed charge in rates for space heating which will more nearly reflect the fixed annual costs involved in supplying this type of service.

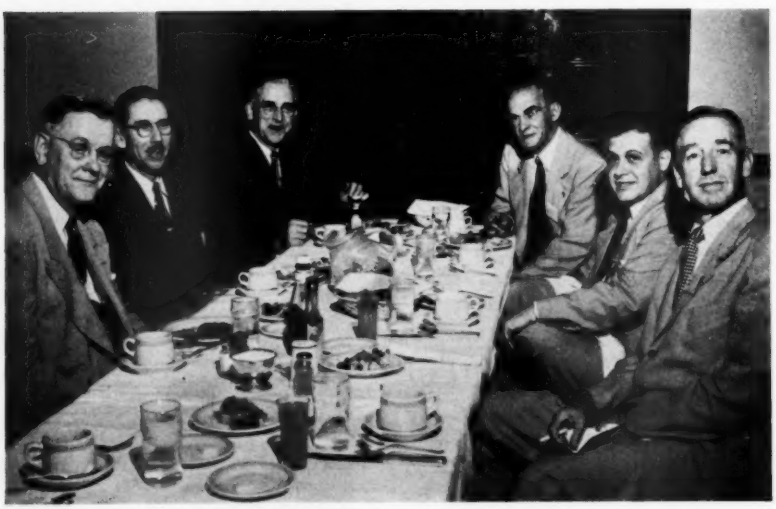
"Consider also," Mr. Herrman said, "the merits of winter-summer rate differentials to promote the use of air-conditioning by your regular residential and commercial customers who will not do a disappearing act with each drop in the price of fuel oil." Optional seasonal billings which spread the cost of space heating over a full year also received Mr. Herrman's approval. (The three-way discussion is reprinted elsewhere in this issue of the MONTHLY.)

N. C. McGowen, chairman, A. G. A. Committee on Natural Gas Reserves, and president, United Gas Pipe Line Co., Shreveport, presented an optimistic picture of the proved and potential gas reserves available to sustain the industry's vast expansion program. Natural gas reserves of the United States at the end of 1949 were estimated at 180.4 trillion cubic feet, Mr. McGowen reported. Production during 1949 was 6.2 trillion cubic feet, or only 3.4 percent of the reserves at the end of the year. However, during that year, he pointed out, the industry added 4.6 trillion cubic feet through discoveries of new pools and 8.1 trillion through extensions to known pools, making a net effect of an increase of 6.5 trillion cubic feet above the previous year's proved reserves.

Approximately 82 percent of the na-

▲ Harry K. Wrench (left), president, Minneapolis Gas Co.; E. Holley Poe, New York; A. E. Higgins, General Electric

◀ W. M. Deaton (left), Bureau of Mines, and T. L. Robey, A.G.A., discussing development of A.G.A. research project



▼ Luncheon meeting of A.G.A. Natural Gas Accounting Committee, F. W. Peters (left), Oklahoma Natural Gas Co., chairman

tion's gas is located in the six southwestern and southern states of New Mexico, Texas, Oklahoma, Arkansas, Louisiana and Mississippi, Mr. McGowen stated. Gas is now stored in pools in 13 states in such volume that it must be taken into account when adding up reserves, he noted. On December 31 of last year "stored" gas amounted to 288 billion cubic feet, or an increase of 88 billion cubic feet over the previous year.

The period covered by the reserves committee's studies, Mr. McGowen declared, was one of intensive drilling activity. During the four-year period, 1938-1941, the number of wells drilled during any single year varied between 18,400 and 22,000; but in the four year interval, 1946-1949, the annual number of wells was between 29,300 and 39,800.

As for the future, Mr. McGowen said: "Improvements in drilling and exploration techniques are still taking place, and we still have large areas whose potentialities are still only partly explored. Using the past as a guide, we may therefore reasonably expect to continue to find new reserves of gas for some time to come."

Problems involved in the construction of large-volume natural gas transmission lines were dramatically pictured in an interest-packed color motion picture, "The Toughest Inch," sponsored by The Columbia Gas System, Inc., and its subsidiary United Fuel Gas Co., Charleston, West Virginia.

Following the first general session, the Transmission Committee sponsored an afternoon meeting which centered attention on new developments in the field of natural gas transmission. The committee chairman, F. A. Hough, vice-president, Southern Counties Gas Co., Los Angeles, presided.

W. C. Mosteller, Southern Counties Gas Co., Los Angeles, initiated this program with a detailed analysis of costs and design factors in transmission-line-type storage. Mr. Mosteller described the line-pack storage system built into the Texas-Pacific pipeline system. This storage was obtained, he said, at a fraction of the cost of an equivalent amount of conventional above-ground, low-pressure or high-pressure tank holders of the type previously used for daily load equation in Southern California.

The storage feature in the California section between Blythe and Santa Fe Springs was obtained by increasing the pipe wall thick- *(Continued on page 14)*

National publicity spotlights industry's increased responsibilities

Gas lines make good headlines

By Hugh H. Cuthrell

President, American Gas Association; Vice-President, The Brooklyn Union Gas Co., Brooklyn, N. Y.

The gas industry has become the number one industry in the public eye with columnists, cartoonists, and editors all publicizing the spectacular growth of gas. In short, gas has become a byword as well as a useful servant. What does all this mean?

In order to answer that question, we must look a little more closely at our present position. We have about 24 million customers in the gas utility business with an additional five and one-half million on the gas lines served by the allied LP-gas business.

Year by year we have made substantial gains in number of customers served and our revenues have also reached new peaks. We rank among the half dozen largest industries in the country. Based on A. G. A. gas utility construction estimates, total plant investment of the gas industry by 1952 will be nearly $9,000,000,000. In the short space of seven years, the industry will have doubled its investment! This speed of growth is breathtaking and accounts in large measure for the spotlight thrown on the industry today.

Looking a little closer at this picture, we find that residential gas customers in the past ten years have increased 50.3 percent. GAMA reports more than 27 million domestic gas ranges and 14 million automatic gas water heaters in use at the end of 1949. More than ten million domestic gas ranges and nearly seven million automatic gas water heaters have been purchased in the past five years. At the end of 1949 there were four domestic gas ranges in use for every electric range.

True, we have made substantial progress; nevertheless, we face the most critical period in our industry's history. If we choose the course of industrial statesmanship, there will be no limit to our achievements. On the other hand, our path in the next few years is strewn with obstacles which could undermine our entire future as one of the nation's prime essential industries. It is my firm opinion that the industry will stand or fall from grace depending upon decisions which we make today.

These are perplexing times—times of change. The industry today, as at no time in the past, does have a responsibility to support sound conservation and the best techniques for developing natural gas fields. We can save a lot of future sorrow through sound business statesmanship today. *The best answer to threats of socialization is the guarantee that our operation is at maximum efficiency and in the public interest.*

The gas industry is in a transitional period of far more importance today than that of the early postwar period. Large numbers of our customers are being converted to natural gas or to a gas enriched by natural gas. Consider for a moment the changing character of the industry as a whole. In 1939 nearly one half of the total customers received straight manufactured gas service, with the remainder getting natural or mixed gas. Ten years later only 35 percent of the total custom-

▲ A.G.A. President Cuthrell (second from left) with H. N. Mallon (left), president, Dresser Industries, Inc.; A. H. Weyland (third from left), vice-president, Arkansas Natural Gas Corp.; James F. Oates, Jr., chairman, The Peoples Gas Light & Coke Co.

Abridged version of paper presented at spring meeting, A. G. A. Natural Gas Department, in Tulsa, Okla., May 8 and 9, 1950.

ers received manufactured gas, while 65 percent were getting natural or a mixed gas. When present plans for piping natural gas to the northeast and to other areas are completed, companies supplying more than 95 percent of all gas customers will be serving natural gas or a mixed gas.

In other words, from the position of an important regional supplier, the natural gas branch of the industry has grown until it will soon blanket the nation. Naturally, this imposes important problems and no less important responsibilities. What I am most concerned about is that we accept the national responsibilities commensurate with our assumption of national influence.

Natural gas is the same kind of commodity in the northeast as it is in Texas. When there is a pipline blowout in Texas, it is felt in New York. Any stigma or any achievement of natural gas in Tulsa, for example, is soon reflected in the minds of the people in Chicago, Cleveland and elsewhere. Public opinion is being influenced daily by every act of every member of our industry. No longer is the local gas company the sole arbiter of its fate. National tides and national trends are at work. Let's face the fact that, whether we like it or not, we're all in the same boat.

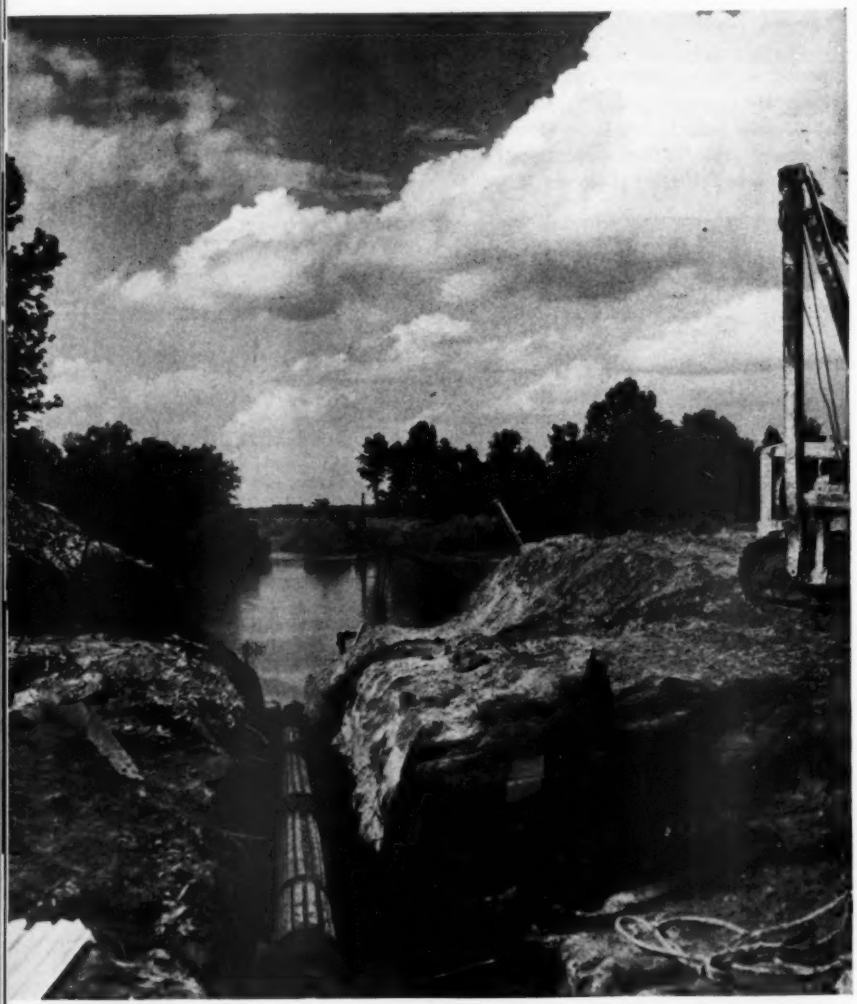
Let's conduct ourselves so that no fair-minded person can point a finger of complaint against us. It won't be easy but I believe a few guide posts will help keep us on this path.

First of all we have a responsibility to practice good public relations. Public relations is a much abused and confused term but to me it all boils down to the constant practice of good leadership—leadership in the public interest. Leaders in a democracy are the men and women who win friends and influence people by word and deed. Leadership has been called the "engineering of consent." It is getting people to follow you because they want to, not just because you want them to. That means winning the support and good will of all forces that make up our society—housewives, farmers, laborers, businessmen, religionists, educators, government representatives, and others. It also means enlisting the support of those who influence opinion.

The white light of national publicity magnifies our every move. Thus it is incumbent upon us to take every step with extraordinary caution lest we unnecessarily align powerful public and governmental forces against us. We all know there is vigorous competition among pipeline companies to serve certain profitable markets. There is no less a scramble amongst various utilities to secure adequate supplies of a fuel that will alleviate their economic difficulties and allow expansion of their service. So far so good. *But every one of us should keep constantly in mind that any unsound pipeline expansion or any allocation or pricing of gas contrary to the general good will ultimately react to the detriment of the gas industry.*

Because I have often cautioned our own people at Brooklyn Union and others in the manufactured gas industry to be wary of being priced out of the market, let me put in a word to balance this point. Gas as a fuel has a value of service and should not be cheapened by too low a price. Too low a price could be a road to ruin, as well as too high a price.

In the words of D. A. Hulcy, "lush prospects ahead must not lead to over-expansion. The growth must be sound



A dynamic gas industry must practice good public relations and attract new talent

and orderly with due consideration for the realities at the end of the road."

Let me inject a word of caution to both gas transporters and gas distributors. Many ills and misfortunes besetting industries have stemmed from the question of monetary profits. No transporter or distributor of natural gas can expect to make an exorbitant rate of return. A satisfactory relationship between seller and buyer must be maintained if the industry is to prosper. Speaking as a buyer of natural gas—we do not want public controversies or hearings before regulatory bodies or courts. We want fulfillment of contracts arrived at on an equitable basis. We want complete information from our supplier in reference to any condition affecting our gas supply, now or in the future, so that we may deal intelligently with our customers. I am a great believer in the axiom that no contract is good unless it is mutually profitable. In a mutually profitable contract, there must be confidence and respect between the contracting parties.

Industrywide programs

In addition to our daily responsibility to the public, we have a responsibility to our industry to support industrywide programs. It is not enough to conduct ourselves with alertness and vigor in our own local operations. We are a national industry; and although as individuals our concern is mostly local, we have countrywide problems that require concerted thinking and national action. No matter how strong we are in our own communities, we cannot hope to progress any faster than the industry itself. We have powerful competitors who are straining every resource to capture our best markets. We can meet that threat only by united action on a national scale.

This calls for unstinted support of such far-sighted programs as the PAR Plan. I am sorry to say that not all gas companies are behind the PAR Plan. The industry needs this program—in fact, its very future is being made more secure by PAR. Every individual company profits from it. The petty road blocks keeping us from full and united participation must be moved aside. That way, and only that way, can we build this program to the limit of its possibilities. While I am encouraged by additional contributions to the PAR Fund made this year by utilities and pipeline companies, in my opinion we're still way short of a reasonable maximum.

By the end of this year, the industry will have spent over a period of five years, through the PAR Plan, more than nine million dollars on promotion, advertising and research—the pillars of modern industrial progress. Maybe that does not sound like much money in terms of today's federal budget, but let us see what results is has produced in the gas business.

First, this program led the industry to the greatest heights in terms of gas sales that it has ever known.

Second, it has been a potent unifying force.

Third, it has integrated the promotional efforts of the entire industry to give the greatest possible impact on all fronts at the same time.

Fourth, it has backed this promotion with a research program that has already brought innumerable modern technical advantages to gas utilities and to consumers.

Fifth, and best of all, are the continuing research and promotional projects that lie ahead of us.

It is my belief that the welfare of our industry hinges on our efforts in research and promotion. Research is filling the technical gaps vital to our progress. It is providing assurance of a well-rounded, permanently expanded technology which insures our future.

A restricted technology has never brought anything but disaster to an industry. Unless we can envision, prepare and plan for an industry expanded at least two or three times this present one in the foreseeable future, we are failing in our jobs. Such expansion calls for a lot of engineering skill. It calls for the development of new processes, new appliances and new outlooks. If we are to succeed in a changing world, we have to change with it.

To my way of thinking, the PAR program is doing just that. Take for example, the utilization research program where we have mounted an all-out attack on domestic, industrial and commercial problems. The emphasis in this program has shifted from short-term technical appliance improvements to an attack on fundamental long-term utilization bottlenecks. In the domestic field, the main targets are the three basic techniques which apply to every appliance: ignition, combustion and venting. Many valuable studies already have been published by A. G. A. More important, however, is the closer liaison which is being brought about between manufacturers and utilities. This cooperation is bound to be reflected in the development of the more efficient and useful gas appliances which we need to strengthen our competitive position.

In this connection a new gas ignition project is of special interest. Beginning this year, in cooperation with appliance manufacturers, field tests of automatic gas ignition systems will be made under A. G. A. auspices. Ultimate objective of this program is the development of automatic ignition that will consume no energy when not in use. Meanwhile we hope to improve present systems and to encourage the development of new ones.

Every element of the gas industry has both an opportunity and a responsibility to support national sales programs. Through PAR, a national calendar of coordinated, integrated promotional programs on all gas appliances has been developed. Through PAR, a hard-hitting team of associations, utilities, manufacturers, and dealers is multiplying the effectiveness of every promotional dollar. Through PAR, the gas industry is attaining a national sales unity that should go far to match the tremendous resources of our competitors. Through PAR, a steady stream of sales helps, from motion pictures to envelop stuffers, is providing ammunition to battle our competition.

Large-scale effort

In the field of national advertising, PAR is underwriting a large-scale effort to influence the thinking and buying habits of the public. This program has to be supported by every segment of the industry in fair proportion to the benefits they will receive.

But PAR can't do it alone. In the promoting of gas sales, it is still on the local level that the greatest efforts must be made. All of the promotions of A. G. A. and all of the advertising on a national scale mean little if we do not capitalize on them in our own back yards.

I do not know the details of each individual company's sales policies, but I do know that merchandising gas appliances can pay off! We in Brooklyn Union are strong believers in it because we have had to go out *(Continued on page 41)*

C. F. Geltz (right), chief inspection engineer for A.G.A. Laboratories, mapping an inspection trip with his assistant, Thomas F. Leitch

150,000-mile appliance patrol

It's busy going these days for the "A. G. A. Approval Patrol"—the engineers who check production models of approved gas appliances in the field. The patrol is an important element in the self-regulatory program of the industry to maintain and upgrade the quality of gas appliances supplied to the public.

Just as the growing network of gas transmission lines rapidly has increased the tempo of the whole industry, so too has the pulse of the nationwide inspections conducted by the A. G. A. Laboratories been raised.

Fanning out over the nation by plane, train, bus and automobile, Laboratories' inspectors are ever on the go, covering better than 150,000 miles this past year. In order to meet the production programs of appliance and accessory manufacturers, which have surpassed all previous records for the third successive year, the inspection staff at the Cleveland Laboratories has been doubled. Members cover all manufacturers located east of the Rocky Mountains and in Canada, extending easterly to Sackville, N.B., and Amherst, Nova Scotia.

Inspections west of the Rocky Mountains, covering seven states, are handled from the Pacific Coast Branch of the Laboratories in Los Angeles. Included are companies located in Denver, Colorado and Billings, Montana, which can be visited more conveniently by inspectors from that branch.

The Cleveland inspection staff comprises a chief inspection engineer, an assistant chief and ten inspectors. All of the inspectors are "graduates" of the testing department and consequently are thoroughly versed in Laboratories' test procedures and American Standard approval requirements.

Carl F. Geltz heads the staff with Thomas S. Leitch as his assistant. Both are veterans of the Laboratories, having joined the staff in 1939. Mr. Geltz has been in the inspection department since 1940 and Mr. Leitch since 1946. Supervisor of the Pacific Coast inspection department is James A. Stone, who joined the staff in 1946. He is assisted by two inspectors, Vincent Garni and Benjamin T. Prather.

Yearly announced inspections, unannounced inspections, and special inspections are the major calls which inspectors make on manufacturers. In addition they visit warehouses and sales floors, consult with utilities, and occasionally inspect appliances in consumers' homes and housing projects. Individual appliances are checked and their installation as well.

Annual inspections are made to determine that the current production quality of appliances originally tested at the Laboratories is satisfactory. This step is a preliminary to renewing certification for the ensuing year. Initial approval by test is granted only for the balance of the calendar year in which the test is performed. Annual reapproval by inspection may be made for a period of five years after which retest at the Laboratories under the latest requirements in effect is mandatory.

Manufacturers are given approximately four weeks' advance notice of annual inspections. This enables each manufacturer to prepare an assembled production model for checking, since often equipment is shipped "knocked down." Complete assembly is necessary since performance in many instances is closely allied to the exact relationship of parts and controls.

Annual inspections for the current year have just been completed with inspectors visiting a total of 503 plants—approxi-

Inspectors may start by air but sometimes "hoof" that last mile to make an unannounced visit

mately 100 more calls than were made last year. At the same time, the number of manufacturers producing A. G. A. approved equipment increased about 25 percent over the previous year. The last issue of the A. G. A. Directory of Approved Gas Appliances and Listed Accessories contained 432 pages, the largest ever compiled. Its size reflects not only the increase in the number of manufacturers and different models approved, but a similar increase in the number of dealers, distributors and similar organizations to which manufacturers have extended approvals.

Unannounced inspections

The directory is issued by the Laboratories each January and July, with supplements published during the intervening months. The job of compiling and keeping straight the records for the thousands of individual items listed is handled by Mrs. Catherine B. Krause, secretary. An accompanying photograph shows Mrs. Krause hard at work using equipment recently purchased to facilitate preparation of directory material for printing.

Unannounced inspections are made without advance notification and are conducted as a regular check on production of appliances to see that specifications are rigidly followed. Special inspections are made in cases where a new line is going into production or a firm is opening a new plant. Manufacturers often request special inspections when they reschedule production on a unit to make sure that its construction is entirely satisfactory. Most firms are just as anxious as the Laboratories to have their appliances fully meet all requirements.

A number of manufacturers recently have authorized other concerns to fabricate their appliances for them. Consequently, this year has witnessed a considerable increase in the number of special inspections needed to work out approval arrangements and to check on the production of units produced at the other plants. One firm now has five other manufacturers making ranges for it. A furnace concern has enlisted the aid of three manufacturers.

Keeping on schedule, getting out reports, making traveling connections and hotel reservations are some of the things that plague an inspector. Usually things go along smoothly, thanks to Mrs. Krause, a veteran of 18 years of service who has learned to anticipate many of the wants and needs of her "boys." She manages to keep track of their reservations, take care of switches in scheduled stops, is uncanny at communicating with the inspectors and getting records and written material to the right spot at the right time.

Trips for annual inspections vary in length from two to four weeks, the longer ones covering the territories around large cities. There are 30 districts covering the United States and generally eight or nine of the men are on the road. Inspectors are rotated between the various districts so that the same engineer is not always calling on the same firm.

Special and unannounced inspections are usually of short duration, sometimes lasting only a day or two. The recent trend towards approval of an appliance with a number of interchangeable controls has vastly increased the amount of correspondence which the inspection force is called upon to handle.

Inspectors exchange information not

▲ Mrs. Catherine B. Krause keeping record of approvals for publication in A.G.A. Directory of Approved Gas Appliances and Listed Accessories

only on business matters, but on hotels, traveling connections, the best way to get from one town to another, and other such matters. A card system noting such information for each company is kept. Manufacturers on the whole cooperate with inspectors not only concerning business details but on accommodations and local transportation. Occasionally, however, such as on an unannounced inspection in some remote section of the country, the inspector finds that he has to "hoof it" that last mile or two to the plant with his 40 pound bag.

On the whole, inspectors usually find appliances and accessories being constructed as approved and fully meeting all requirements and specifications. Manufacturers cooperate wholeheartedly in making the approval plan work for the benefit of the entire industry. Numerous manufacturers are active in the work of

▲ James A. Stone, inspection supervisor, Pacific Coast Branch, A. G. A. Laboratories

A. G. A. Approval Requirements Committee and its subgroups which prepare the standards applied in the testing and approval program. Manufacturers usually notify the Laboratories of design changes before they are made and ask for a ruling on their acceptability. Where the performance of the appliance or its safety is not affected, these are promptly allowed. If there is any doubt, the appliance is recalled to the Laboratories for retest.

The same procedure is followed if modifications are encountered on inspection, the acceptability of which cannot be determined without retesting. To date only a few serious discrepancies have been encountered. In such instances, satisfactory correction must be made immediately or approval is withdrawn. In only a very limited number of cases has it been necessary to withdraw approval. The fact that such action is required so infrequently attests the generally high quality of production of approved gas appliances.

Natural gas giant

(Continued from page 8)

ness and providing additional compressor horsepower at Blythe. Thus gas could be packed into the California section by increasing the operating pressure.

Although input deliveries into the California section at Blythe are maintained at a substantially uniform rate of about 305 million cubic feet per day, Mr. Mosteller said, it is possible to vary terminal deliveries widely from hour to hour in accordance with the requirements of load conditions in the Los Angeles area. The storage feature of the line is equivalent to a holder capacity of between 52 and 75 million cubic feet per day. Mr. Mosteller estimated the cost of this storage system as $37 per million cubic feet based upon present day prices.

New data on use of solid adsorbents in natural gas drying were announced in a paper by E. P. Wilkinson, Magnolia Petroleum Co., Houston, and B. J. Sterk, Socony-Vacuum Laboratories, Brooklyn, which was presented by Mr. Wilkinson. The paper covered results of extensive tests of a new solid desiccant, Sovabead, developed by Socony-Vacuum for natural gas drying operations, and compared its performance with activated alumina.

After presenting the results of their tests, the authors concluded that significant differences in the performance of common adsorbent materials can be determined through carefully controlled operation of a commercial drying unit.

"The accompaniment of this work by pilot plant tests," Mr. Wilkinson said, "permits more careful scrutiny of the performance of a desiccant under variable conditions of velocity, humidity, and regeneration. The data so derived, combined with operating data from other commercial units, can be used by designers of equipment and operators of natural gas plants in building more efficient units to obtain maximum plant capacity at minimum cost."

A valuable case history of steps taken by Southern Counties and Southern California Gas Companies to remove impurities from both California and Texas natural gas was given by J. L. Oberseider, Southern California Gas Company. This report, which was presented through the cooperation of Pacific Coast Gas Association, dealt largely with methods of removing traces of mercaptan or sulfur, which helped to reduce customer leak complaints and service orders due to corrosion. Mr. Oberseider described the elimination of wet gas-well gas, absorption plant operation, and desulfurization processes.

Closing event of the transmission session was the showing of a colorful motion picture of pipeline construction in rugged country, sponsored by H. C. Price Co., Bartlesville, Oklahoma.

A host of Tulsa friends of the gas industry, led by Oklahoma Natural Gas Co., entertained the conference delegates and their wives on Monday night at a reception, dinner and dance.

At the conclusion of the second general session, it was announced that the natural gas program committee for the A. G. A. Convention to be held in Atlantic City, October 2-6, would consist of C. E. Bennett, Pittsburgh, chairman; E. L. Rawlins, Shreveport, and C. H. Zachary, Dallas. The Time and Place Committee, J French Robinson, Cleveland, chairman, selected Dallas, Texas, for the 1951 Natural Gas Spring Conference. Date of that meeting was set as May 7-8.

The Program Committee for the highly successful Tulsa conference consisted of Paul R. Taylor, New York, chairman; Arthur F. Bridge, Los Angeles; F. T. Parks, Denver, and A. H. Weyland, Shreveport.

Salesmanship

● At last income-tax time, a Wall Street house put in a deduction for depreciation on ten $10,000 chairs. The Federal Tax Bureau sent a man around to check.

The sales manager took him into the sales department. "You see those ten chairs?" he asked.

"Well, those chairs cost this firm the best part of $10,000 each last year, with our salesmen sitting in them when they should have been out looking after business." —*John Straley, Investment Dealers' Digest*

A.G.A. utilization studies pave way for industrywide progress

Research—our fourth dimension

By JOHN W. WEST, JR.

Assistant Managing Director and Secretary, PAR Committee
American Gas Association

It is to the credit of the gas industry that during World War II its leaders took enough additional time in the midst of their mobilization efforts to look ahead and make plans for maintaining and enhancing the position of the industry in the postwar economic picture of the nation.

Thirty-one recommendations were advanced as vital to the postwar growth of the industry. This was in April 1944 and placed the gas industry in the enviable position of being one of the first, if not the first major American industry to complete and announce its postwar plans. An enlarged and coordinated program of basic research was one of the steps diagnosed as being most pressing.

In urging this enlarged research program, gas appliance and equipment manufacturers played an important part in the person of such present leaders as Frank Adams, Stanley Hobson, Lyle Harvey, Louis Ruthenburg, and Colonel Rockwell.

Most important of all, a Committee of Action was appointed to put these recommendations into effect. Two months later, a special "Town Hall Meeting" of the gas industry was held in Chicago to present these steps for pre-review and to determine the sum needed to carry them out. The Committee of Action became the present PAR Committee and set out in October 1944 to raise $600,000 a year entirely from gas companies for Association research—nearly nine times the amount spent during prewar years.

During the past 5½ years a total of $2,829,296 has been spent for Association research of all kinds. With the exception of $17,000 received from gas plant manufacturers and used for gas production research, all of these funds have been solicited and received wholly from gas utilities and pipeline companies. Of the total spent, $789,320 has been devoted to domestic gas research and $211,830 to industrial and commercial—a total of $1,001,150 spent on utilization research. In addition, $1,579,875 has been devoted to gas production work and $248,271 to general technical research of direct interest to pipeline companies and utilities engaged in pipeline operations.

At times it has not been easy either to raise this $2,800,000 or to secure agreement upon the most expeditious ways of spending it. Many overtime hours have been spent by many industry leaders in securing the gas company support necessary to underwrite this work. Many other overtime hours have been spent by manufacturer and utility technicians in deciding what technical voids needed exploring, and how these explorations could best be directed.

In 1936 a very legal sounding statement of principles was jointly agreed upon to forestall any violation of individual manufacturer prerogatives that might result from the discovery of new and significant utilization data.

About seven years ago we decided that there was no need to determine in advance the proper fields for research by gas appliance manufacturers and gas utilities in any over-all fashion. Instead, we agreed to decide the question on an individual project basis. We agreed that no project would be undertaken by the Association until it had been approved by the interested research committees representing both manufacturers and utilities, and by the Executive Board of the Association as an A. G. A. activity.

Manufacturers are appointed members of Association research committees and technical advisory groups for three principal reasons:

(1) When missing utilization data calls for fundamental or applied research, they can tell us whether this data is already available or is being sought elsewhere. Nothing would please the utilities more than to have the individual manufacturers do the whole job themselves. Nothing would kill the PAR program quicker than for that fund to be wasted in needless and overlapping projects.

(2) Some manufacturers have done and are doing substantial amounts of research and development work on appliances or equipment utilizing gas. We

a PAR activity

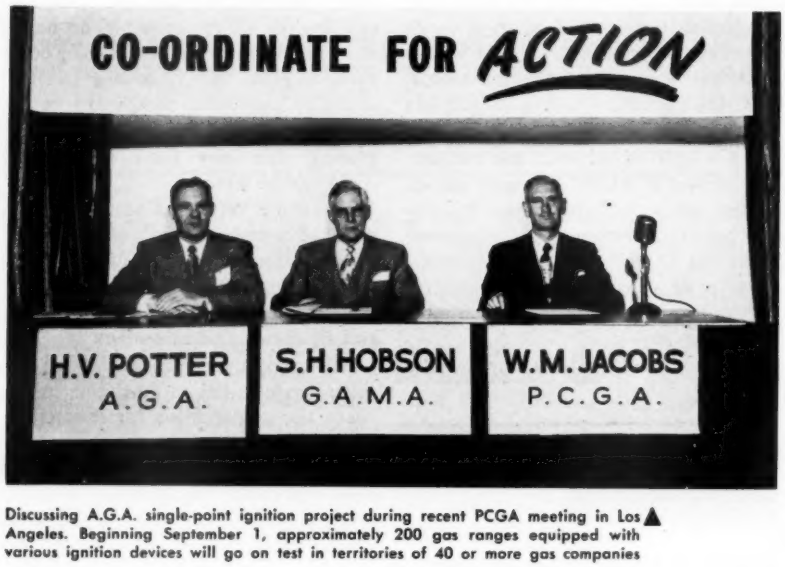
UTILIZATION RESEARCH HAS

- ✓ Elevated the position of the gas utility industry in the public esteem
- ✓ Helped to strengthen the industry's faith and confidence in its own future
- ✓ Developed the beginnings of a constructive research fraternity of manufacturer and utility technicians
- ✓ Placed much useable data in the hands of gas utility engineers

Abridged version of paper presented at A. G. A. Domestic Gas Research and Utilization Conference in Cleveland, Ohio, April 25 and 26, 1950.

need the benefit of their expert counsel and advice as to the unexplored fields which are potentially the most profitable, and the methods of exploration most likely to prove effective. Furthermore, bearing in mind the specific objective of elevating the basic performance levels of gas appliances, we need their viewpoint as representatives of those who manufacture these appliances today and will manufacture them tomorrow.

(3) Appliance manufacturers do not have the impelling urge to make prompt and full use of the research data that would come from their having shared in its cost. However, we have felt that their presence on the research committees and their familiarity with the details of the research work would tend to quicken in some degree their use of this data in the design of their future appliances.



Discussing A.G.A. single-point ignition project during recent PCGA meeting in Los Angeles. Beginning September 1, approximately 200 gas ranges equipped with various ignition devices will go on test in territories of 40 or more gas companies

In 1944, the original PAR Committee presented the need for the current Association work by the following statement:

"Research is the life blood of progress. The great industries of this country, some of which are direct competitors of the gas industry, appropriate millions of dollars annually for the development of new and improved products and processes."

What has been the character of this utilization research of the Association toward which the utilities have subscribed more than $1 million to date?

Some of it has been fundamental research in the professional sense. Most of it has had some applied research and development aspects—it has uncovered reasons why something works as it does and has disclosed other steps that might be taken to make it work better.

It would be merely academic to classify the projects according to a professional definition of what is fundamental and what is applied research. It will be more helpful to classify them from the standpoint of: (1) those projects which are fundamental to the growth of gas as a source of heat energy, (2) those which relate primarily to the development and design of appliances without particular regard to the fuel they use.

Under today's competitive conditions, effective venting, ignition and combustion are fundamental necessities for the growth of the use of gas for various domestic, industrial and commercial purposes. Of the 20 domestic projects now under way, 13 or two-thirds of the total are focused primarily upon the development of technical data in one or all of these fields. Seven of the eight industrial and commercial projects are also of this character.

A recent advertisement of Bell Telephone Company summarized the cycle from fundamental research to a final improved product in four steps:

(1) Fundamental research uncovers the new possibility, finds the new idea.

(2) Applied research and development makes the new idea or method work.

(3) Design gives it form.

(4) Specifications and production produce the product.

What has this million-dollar research expenditure, aimed at higher basic performance levels of gas appliances, meant as a force for progress—(1) to gas companies, (2) to gas appliance manufacturers, and (3) to present and prospective customers of both?

First, research has elevated the position of the gas utility industry in public esteem and in the minds of the financial world. The simple fact that the gas industry has joined the group of other great American industries by adopting organized research as a basic weapon for its greater growth and public service has brought about this change in public attitude. In the minds of outsiders, the decision of the gas industry to spend substantial sums for Association research is proof that gas industry management is alert.

Second, our research requires the study of basic industry problems. It also involves the determination of their relative importance, a decision as to the possibility of their solution, and the setting up of research and development steps to that end. All of this is done by management and technical leaders of the industry. This process of self-analysis has helped to strengthen the faith and confidence of the industry in its own future.

Third, the dissemination and discussion of research reports, bulletins and papers, and the holding of conferences, have afforded the opportunity and means for cross-fertilization of many minds, all engaged in research, development and utilization work. This has resulted in the beginnings of a research fraternity of manufacturer and utility technicians within the gas industry which cannot but be helpful to them and to the companies they represent.

Fourth, as result of broadening the scope of the utilization research to include the possibilities of improving the installation and operation of gas appliances in service, much useable data has been placed in the hands of gas utility engineers. This covers subjects such as minimization of gas water heater tank galvanic corrosion; aeration and venting of gas appliances in confined spaces; home humidity—its causes and effects; design data on ducts for year-round air conditioning; venting of gas appliances, and kitchen ventilation. In addition,

much purely exploratory work on new methods of combustion, heating, cooking, and related services has been done which otherwise would not have been undertaken.

These four benefits are all concomitant results of the gas industry's putting into effect the first two steps in the Bell Telephone advertisement. But they are not a measure of achievement of the major objective of the utilization research program which was and is to elevate the performance levels of gas appliances. To answer this question we must examine the extent to which the last two steps in the Bell advertisement have been carried out in the gas industry.

How much has gas appliance design and performance given form to the research data uncovered, and how much of this data has been incorporated or reflected in the specifications and production of today's gas appliances?

I am quite conscious of the fact that no manufacturer, of ranges for instance, could have been expected to change his designs during the war when 145-pound gas ranges were the rule, and all were making war products. Also, the seller's market following the war was not conducive to the incorporation of research data in new product specifications at a time when any product was sold before it was made.

I am also quite conscious of the fact that a period of ten or 15 years usually intervenes between fundamental research on an entirely new product and the development and availability of that product. A lesser period intervenes in the case of improvements in specific features of an established product.

Research reflected

While they are not particularly numerous, there are some undeniable signs that research is reflected in today's appliance design and performance.

Here is a most important example. As a result of the initial research bulletin No. 10 on Atmospheric Burner Design in 1940 and subsequent work, the burners on most gas appliances today show that this phase of appliance design has become less of an art and has taken on more and more of the aspects of a science. Burner design as a whole is better. Some detailed features also have been improved.

For example, some individual manufacturers now use a simple and improved design for a lintless-pilot air shutter which resulted from a research project on that subject. On the other hand, the proposal that this simple type of shutter be made a basic appliance approval requirement failed of adoption because of the opposition of manufacturer members of the responsible requirements subcommittee.

Moreover, in today's gas ovens and broilers a wide use has been made of heat distribution and regulation data uncovered by research work during the past several years. Also, the basic data developed on single-point, flash-tube gas ignition has been carried further by some manufacturers, and research work on electric ignition has served to stimulate further developmental efforts on their part in that field.

Other research work is reflected to a limited extent in available appliances. For instance—some lowering of range grates and improved re-ignition of burners when partially opened, and the performance of furnaces when operated at reduced inputs.

In the industrial field, research on gas radiant tubes has stimulated manufacturers' development and application of this technique to enameling and heat treating furnaces designed for a wide variety of purposes. Some deep fat fryers have incorporated the data derived from commercial cooking research.

Aside from such cases, however, it is difficult to prove that the pertinent technical data uncovered by this expenditure of one million dollars has been used in the design and performance of today's gas appliances.

Thus it is obvious that the extent to which basic performance levels of gas appliances will be elevated by past and future utilization research rests primarily in the hands of the appliance manufacturers. To put it another way, the full meaning of this research program to utilities as a force for industry progress, and to appliance customers and prospects as a force for better gas service, depends primarily upon future use of this research data by the producers of appliances.

The Association, through the PAR Committee and its research committees and staff, is doing everything possible to encourage and make it easy for manufacturers to use this technical data in the improvement of their products which utilize gas. Not the least of these efforts are conferences where the published data is subjected to further analysis and technical diagnosis by manufacturer and utility experts in the field of gas appliance design and gas utilization.

These efforts will be continued and expanded. For instance, the form of research reports has been altered from time to time to make them more useable by the reader.

To make the reports more useable to the appliance design engineer, future reports will have a section bringing together the useful working formulae, figures, experimental tables and conclusions with the minimum explanation and discussion necessary for their proper use. Other sections will be devoted as before to a chronology of the project work with a complete discussion of details, mathematical derivatives and experimental results.

Automatic ignition

The gas utilities are as anxious as the Association's committees to expedite early improvements in gas appliance design and construction. Striking proof of this is shown by the action taken recently on further development of automatic ignition for gas ranges.

In this case, President Cuthrell, who is also a member of the PAR Committee, appeared before a group of manufacturers of ignition devices and ranges. Speaking for the PAR Committee, he told them that he was in a position to promise a fund of $100,000 a year for this purpose if that would accelerate the availability of the desired product.

The manufacturers showed him that they had spent and were spending substantial sums for research and development work on ignition. They assured him that no further work of this character by the Association was needed. They said that the missing link to accelerate product availability was comprehensive and simultaneous field testing in consumer homes under representative gas service conditions of the ignition devices now available in the experimental stage. As a result, 200 or more ranges equipped with each type of ignition system will go on test in the territories of 40 or more gas companies throughout the nation on September 1.

Until this approach was adopted, we had attempted to handle the problem of shortening the interval between research and improved appliances by publishing and discussing the results and leaving the rest up to the in- *(Continued on page 29)*

A. A. Kampman (left), A. G. A. Laboratories; John W. Farren, Ruud Manufacturing Co.; Harry B. Carbon, Bastian-Morley Co., Inc., and L. T. Tegler, A. O. Smith Corporation

▼ Wednesday morning speakers in Cleveland: (Left to right) Dr. Robert C. Weast, Case Institute of Technology; C. George Segeler, A. G. A.; G. C. Beck, The Brooklyn Union Gas Company

Tuesday speakers: (Left to right) Walter B. Kirk, A. G. A. Laboratories; Edward Nelson, Rochester Gas & Electric Corp.; Frank H. Adams, Surface Combustion; Keith T. Davis, Affiliated Gas Equipment; Eugene D. Milener, A. G. A.

Head table at conference luncheon: (Left to right) John W. West, Jr., A. G. A. assistant managing director; Stanley H. Hobson, GAMA president; R. J. Rutherford, president, Worcester Gas Light Co., conference chairman; W. R. Teller, Affiliated Gas Equipment, Inc.; Frank H. Adams, president, Surface Combustion Corporation. Conference was the fifth of its kind in recent years

Executiv lly

a PAR activity

American Gas Association research truly has come of age!

It "spilled out and over" at the A. G. A. Domestic Gas Research and Utilization Conference in Cleveland, April 25 and 26, with an impact and vigor which revealed its impressive growth and strength. Long before the curtain fell on the two-day sessions, held under auspices of the A. G. A. Committee on Domestic Gas Research and the A. G. A. Utilization Bureau, there was no doubt of the virility of the industry's program. The offensive spirit which the PAR Plan has fostered was evident throughout the entire proceedings.

The fifth of such conferences held in recent years, this one was decidedly different than its predecessors. The difference was not so much one of programming and selection of speakers as it was a difference in spirit—that intangible ingredient which gives men a lift when they sense that progress is on the march and their team is "on the ball." Spirit of this type was evident in the remarks and questions; in the confidence of speakers and the forthright discussion of "ticklish" problems; in the frank approach and working harmony of research and utilization minds.

The entire team was in there playing

▼J French Robinson (left), president, The East Ohio Gas Co., and C. G. Frantz, president, Apex Electrical Manufacturing Co., guest speaker

▼Panel on novel gas uses in the home: (Left to right) Leon Ourusoff, Washington Gas Light Co., leader; Charles O'Neil, Hamilton Mfg. Co.; John Davidson, Servel, Inc.; T. H. Landgraf, Autogas Corp.; A. W. Lundstrum, Stewart-Warner

lly domestic research gains

a cooperative game for the benefit of all. There was abundant proof that tax projects, whether of a fundamental or of a utilitarian nature, have made enough progress for their individual or collective benefits be apparent to the industry.

Opening the conference, Frank H. Adams, president, Surface Combustion Corp., Toledo, told the more than 300 delegates that two and a half million dollars had been spent on all types of research by A. G. A. since inception of the PAR Plan in 1944. Utilization research in the domestic, industrial and commercial gas fields, accounts for approximately a million dollars of this amount. Mr. Adams estimated that manufacturers have spent probably ten times this amount in the form of application research furthering the basic and fundamental studies conducted by A. G. A.

John W. West, Jr., A. G. A. assistant managing director and secretary of the PAR Committee, explained the philosophy and details of the research program at the opening luncheon. He mentioned that in the field of utilization much of the completed research has not as yet filtered through normal processes into applied translations. On the other hand, Mr. West added, ". . . there are some undeniable evidences of research being reflected in appliance design and performance. . . ."

As examples, he noted that as a result of the initial publication of Bulletin 10 and subsequent work, a real science of burner design has been developed with many gains and still more gains to be accomplished. Other gains cited by Mr. West included an improved lintless air shutter, improved oven and broiler heat distribution, single-point flash-tube ignition, lower range grates, improved top burner ignition, and performance of furnaces when operated at reduced inputs. The speaker also paid tribute to commercial gains from work done with gas radiant tubes and deep fat fryers.

Basic weapon

Above and beyond the benefits to be derived from better appliances and more satisfied customers, Mr. West pointed out that the research program, "has elevated the position of the gas utility industry in public esteem and in the mind of the financial world. The simple fact that the gas industry has joined the coterie of other American industries by adopting organized research as a basic weapon for its greater growth and public service, has brought about this change in public attitude. . . . In the minds of outsiders, the decision of the gas industry to spend substantial sums for Association research is proof that the management of the gas industry is alert." (Mr. West's paper is reprinted elsewhere in this issue of the MONTHLY.)

Pointing out that "In GAMA we enjoy a unity of thought and purpose with A. G. A.," Stanley H. Hobson, president, Geo. D. Roper Corp., Rockford, Ill., and president, Gas Appliance Manufacturers Association, told the conference that research will result in bigger and better things in the utilization of gas.

"All such effort, added together, serves as an insurance policy for the continued superiority of gas as a fuel," he added.

Research work directly concerned with new developments and practices in the heating and air conditioning were discussed in a clinic led by Dr. F. E. Vandaveer, chairman, A. G. A. Technical Advisory Group for this field, and chief chemist, The East Ohio Gas Company. After presentation of the details of projects concerning the nature of heat transfer, corrosion of metals, comfort heating, summer-winter hookups and air distribution systems, Dr. Vandaveer expressed the feeling of the entire assembly when he said, "It gives me a lift to hear things like that."

He noted that we know how to do a job and are learning to do it better each day. "Our equipment is good and we consequently were ready for the tre-

Participants in clinic and question-and-answer period on Wednesday: (Left to right) John R. Beccia, The Connecticut Light & Power Co.; Dr. F. E. Vandaveer, The East Ohio Gas Co., and W. R. Teller, Affiliated Gas Equipment, Inc.

mendous expansion in the use of gas when it came." He displayed research bulletins covering the new developments and commented that "they are good—really good."

Explaining the projects were Richard L. Stone, A. G. A. Laboratories; R. S. Peoples, Battelle Memorial Institute; Keith T. Davis, Bryant Heater Division, Affiliated Gas Equipment, Inc.; G. C. Beck, The Brooklyn Union Gas Co., and Professor Ross Martin, University of Illinois.

The place of cooperative association research in bringing products to market was outlined by C. G. Frantz, president, Apex Electrical Manufacturing Co., who was the guest speaker at the second luncheon meeting.

"Few moderate-sized firms can afford the luxury, promising though it may be, to carry on what is termed pure research, that is, delving into the fundamentals of things without having rather clear assurance of bringing about usable results in the foreseeable future," Mr. Frantz pointed out. He declared that association research could fill this need, working on broadly common efforts that do not restrict the competitive position of individual firms.

"Unlike many other activities that might be said to be working in the direction of advantage to member firms at the possible expense of the consuming public, the broad encouragement by a trade group for development of the scope and utility of its products can hardly be any thing other than beneficial to the public," he said.

William R. Teller, conference chairman and director of engineering, Bryant Heater Division, Affiliated Gas Equipment, Inc., concurred with Mr. Frantz's thoughts. Mr. Teller added that his own firm, about equal in size to Mr. Frantz's, likewise could not devote time and funds to fundamental research on its own.

Beyond the sponsorship and coordination of research, however, lies the problem of putting research findings to work, shortening the time period between the uncovering of important information and its application in improved appliances.

John W. West, Jr., and James A. Nelson, chairman of A. G. A. Technical Advisory Group for Domestic Gas Cooking Research, discussed the first major move to be made in this direction. Beginning in September comprehensive and simultaneous field testing of automatic ignition on ranges will be started in the territories of at least 40 gas companies throughout the nation.

Range and control manufacturers are cooperating with utilities and Mr. Nelson's committee in the project. It was developed after manufacturers agreed that additional Association research work was not needed in this field, but that the missing link to accelerated product availability was field testing of the various devices now available. Ralph Koebbeman, George D. Roper Corp., described details of the testing arrangements.

Technical discussions centered about the "VIC" program—venting, ignition and combustion. Eugene D. Milener, A. G. A. coordinator of utilization research, explained the significance of these research phases. Thirteen of 20 domestic research and seven of eight commercial and industrial research projects are keyed to them.

Keith T. Davis outlined progress made in venting and air supply problems; Edward J. Nelson, laboratory director, Rochester Gas & Electric Corp., progress in ignition problems, and Walter B. Kirk, chief research engineer, A. G. A. Laboratories, outlined progress in combustion and heat application problems.

R. J. Rutherford, chairman, A. G. A. Committee on *(Continued on page 59)*

Gas cooking experts at A. G. A. Domestic Gas Research and Utilization Conference: (Left to right) James A. Nelson, Cribben & Sexton Co.; Winifred C. Anderson, A. G. A. Laboratories, and Ralph Koebbeman, Geo. D. Roper Corp.

Chicago system blends or mixes natural and base gases automatically

How we control gas mixing

By W. H. ISAACS & R. B. PAQUETTE

The Peoples Gas Light & Coke Co. Chicago, Ill.

Gas distributed in the City of Chicago consists of a mixed gas of 800 Btu per cubic foot. This gas mixture consists primarily of natural gas at 1,030 Btu and manufactured gas at 550 Btu.

The manufactured gas, called the base gas, is coke oven gas augmented by reformed natural gas or carburetted water gas, depending upon the season of the year or load on the system.

These natural and base gases are blended or mixed together in automatic gas mixing systems in the proper proportions to produce a standard 800 Btu mixture for distribution to the city system.

A gas mixing system should be automatic in operation, should follow load changes of both volume and discharge pressure rapidly without changes in proportioning the two gases, should be easily adjustable, and be stable in operation.

The gas mixing system used for the city sendout is shown schematically in Figure 1.

Gas Mixing System—This system consists of a base gas line installed parallel with a natural gas line. A butterfly valve is installed in each line and these two valves are linked together mechanically. The base gas butterfly valve and natural gas butterfly valves are called the metering valves, and their function is to meter the volumes of the two gases. The metering valves are operated by a base gas volume regulator. The base gas regulator operates from the differential pressure drop across the base gas butterfly valve.

Volume regulators are hydraulically operated by oil pressure at 90 psi from an electrically driven oil pump. A piston pump driven by natural gas pressure is arranged to cut in automatically to provide oil pressure in the event of electrical failure.

The metering butterfly valves operate somewhat similar to an orifice meter. Therefore, they should be installed in straight runs of pipe, free from obstructions for approximately ten diameters upstream and five diameters downstream.

Mixer Operation—The base gas flows directly from the street compressors at approximately ten psi through the base gas run of the mixer. As the demand on the distribution system changes, the volume of gas through the base gas butterfly valve changes. This produces a change in the differential pressure drop across the base gas butterfly valve. The base gas volume regulator is balanced to hold a few inches water column drop across this butterfly valve. As soon as this pressure drop changes, the regulator moves the valve to restore the original pressure drop, thus the regulator moves the valve to hold a constant pressure drop across the base gas valve.

The natural gas butterfly valve is linked mechanically to the base gas valve. Therefore, as the base gas valve moves, the natural gas butterfly valve moves with it through the same angle. This causes a change in the differential pressure drop across the natural gas butterfly valve. The natural gas volume regulator is balanced to hold a few inches pressure drop across the natural gas valve. As soon as this pressure drop changes, the natural gas volume regulator moves the natural gas regulating valve to restore the original pressure drop. Thus, the natural gas regulator holds a constant pressure drop across the natural gas valve.

This system of valves and regulator

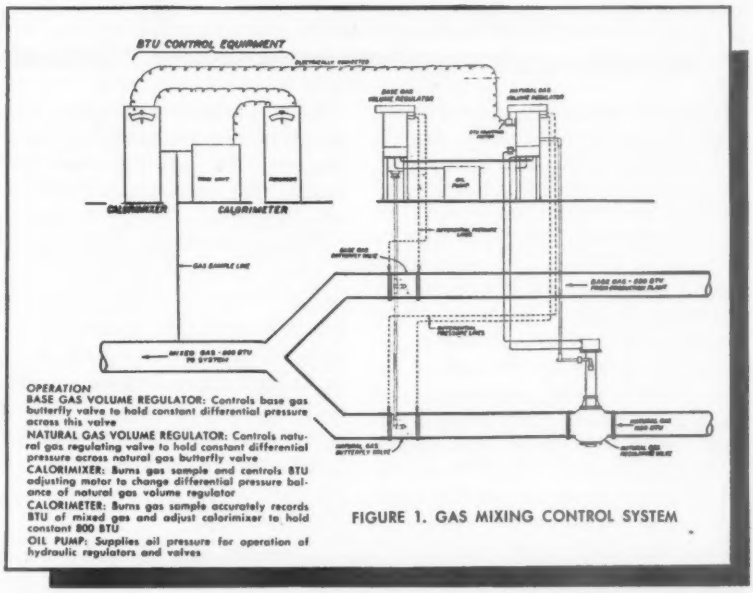

BTU CONTROL EQUIPMENT
CALORIMETER
GAS SAMPLE LINE
OPERATION
BASE GAS VOLUME REGULATOR: Controls base gas butterfly valve to hold constant differential pressure across this valve
NATURAL GAS VOLUME REGULATOR: Controls natural gas regulating valve to hold constant differential pressure across natural gas butterfly valve
CALORIMIXER: Burns gas sample and controls BTU adjusting motor to change differential pressure balance of natural gas volume regulator
CALORIMETER: Burns gas sample accurately records BTU of mixed gas and adjust calorimixer to hold constant 800 BTU
OIL PUMP: Supplies oil pressure for operation of hydraulic regulators and valves

FIGURE 1. GAS MIXING CONTROL SYSTEM

Presented at A. G. A. Production and Chemical Conference in New York, N. Y., May 22-24, 1950.

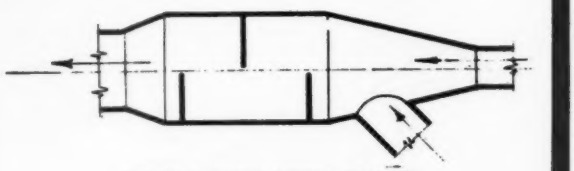


FIGURE 2. BAFFLE MIXING CHAMBER

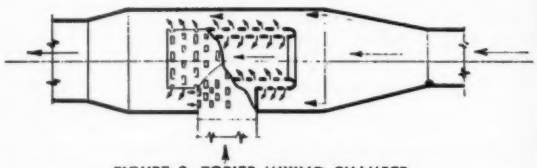


FIGURE 3. TORIES MIXING CHAMBER

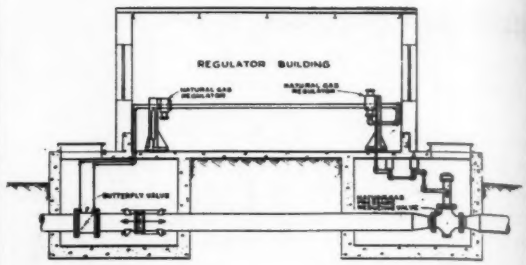


FIGURE 4. TYPICAL INSTALLATION OF GAS MIXTURE WITH UNDERGROUND PIPING

will thus follow load changes readily and hold a constant proportion between the two gases, without regard to changes in Btu or specific gravity of the base or natural gases.

To correct for these changes, a sample of the mixed gas is passed through a calorimeter and calorimixer to determine its Btu. The calorimixer burns the gas sample and automatically operates a Btu adjusting motor, which changes the differential balance of the natural gas regulator. This changes the natural gas flow slightly to hold a constant 800 Btu in final mixture.

The calorimixer gives a fast sample in approximately 30-45 seconds, thus providing rapid Btu adjustment. This instrument is set to hold a constant zero point. The calorimeter burns a gas sample and gives a Btu record in 6-8 minutes. The calorimeter continually supervises the calorimixer to hold its zero setting at 800 Btu.

The gas mixing control system, controlled by the calorimetric equipment, will hold the Btu of the final mixture to within .5 percent, which is the guaranteed accuracy of the calorimetric equipment.

This system operates on the discharge side of the street compressors and delivers the gas mixture directly to the distribution system at the system pressure.

Natural gas enters the mixer at 90 psi and the pressure is reduced to distribution system pressure through the natural gas regulating valve. This system is very stable in operation and has an operation range of approximately 10-1 in volume.

Gas Sampling—It is important that the gases be well mixed before they enter the distribution system and, also, that a well-mixed sample be supplied to the calorimetric equipment which controls the mixer.

In order to insure a well-mixed sample, the sampling point should be sufficiently remote from the mixer to allow time for mixing. The sample line should be as short as possible and of small size to avoid introducing a time lag in the sampling.

Mixing Chambers—If the plant piping system permits the sampling point to be installed sufficiently remote from the mixer, then the gas mixing will take place in the plant piping. In some installations the sampling point must be fairly close to the mixer and a mixing chamber installed to insure a well-mixed gas.

Common type

A common type of mixing chamber consists of an enlarged section of piping with baffles installed inside to provide a tortuous path as in Figure 2. This baffle chamber insures a well-mixed gas. However, it has the disadvantage of introducing a relatively high pressure drop in the system.

In order to reduce this objectionable pressure drop, a Torus type mixing chamber was built as in Figure 3. This mixing chamber consists of a ring made by a 24-inch pipe welded inside of a 30-inch pipe.

The ring or torus was then welded to an inlet 30-inch pipe. Slotted openings were cut into the ring. The total area of the slotted openings was 70 percent greater than the area of the inlet 30-inch pipe. The whole ring tee assembly was then welded into an enlargement of the discharge line.

This mixing chamber offers very little resistance to the gas flow. The gas from one stream meets a large number of small jets of gas from the other stream, so that good mixing occurs in a very short time. This mixing chamber has given good results over very wide ranges of flow.

Installation—Natural gas enters the mixers at 90 psi and is reduced to distribution system pressure through the natural gas regulating valve. This reduction in pressure is accompanied by much noise and, at high flow rates, this noise may become very objectionable.

A noise level of 122 decibles was measured on one installation—this is above the feeling level and may actually induce pain as well as being objectionable over a large area.

In order to reduce this noise level and achieve quiet operation, it is advisable to install the piping and regulating valves for the mixing system underground. This allows the surrounding ground to absorb the noise vibrations. A typical installation of a gas mixer with underground piping is shown in Figure 4. The regulating and butterfly valves are installed in pits and operated by regulators mounted in a building directly above them.

Some attempts have been made to soundproof mixers which are installed above ground. To reduce the noise level on these mixers, a layer of rock wool insulation three inches thick was installed around the piping and then covered with 24-gauge galvanized sheet metal. This method of insulating the piping and valves reduced the noise level to a point that was not objectionable in an industrial area; however, it is not as effective or would not reduce the noise to the level that could be obtained by installing the valves and piping underground.

Sincere appreciation is extended by the authors to all those who assisted in the preparation of this paper and especially to J. L. Adkins who contributed substantially to the work.

Three experts show relationship between higher operating costs and rates

Costs and rates—Siamese twins?

I. Management viewpoint

By B. C. ADAMS

President, The Gas Service Co.
Kansas City, Missouri

My remarks will be applicable to those distributing companies serving their customers with straight natural gas, which is the situation in the company I represent. The Gas Service Company is medium-sized and in another year will be serving about 400,000 customers in an area extending from northern Oklahoma to southern Nebraska on the north, almost to Sedalia on the east, and beyond Wichita on the west.

For every revenue dollar taken in, we pay out 48.84 cents for purchased gas; 19.91 cents for wages and salaries; 10.07 cents for taxes; 3.95 cents for operating supplies and expenses; 1.18 cents for advertising; 3.52 cents for depreciation; and 1.97 cents for interest. The balance amounts to somewhat more than 10.5 cents available for construction, retirement of debt, and dividends.

After we pay for purchased gas, there is but 51.16 cents left out of our dollar. After we take care of wages and salaries there is but 31.25 cents remaining, and after taxes, 21.18 cents. Depreciation is a fixed expense and after that we have but 17.66 cents. After we pay our interest charges, which are fixed, we have but 15.69 cents. The question I raise concerns the problem of what items we are going to attack in an effort to produce more economical operation. After we get by these major items there is not much left to work with.

It is inconceivable that we should expect any reduction in the cost of gas at the town border. Any record or analysis will show that the price of gas in the field is steadily moving upward. Gas that used to cost four cents in the field now costs ten cents, and maybe more. Panhandle Eastern Pipe Line Company is asking for an increase in its town border rate. El Paso Natural Gas Company is asking for an increase. Northern Natural Gas Company is asking for an increase. Of course, any increases will be passed on to the distributor, and the distributor will have to pass them on to the customer.

For every dollar spent in 1945 for salaries and wages, we are now spending $2.45, and apparently the current upward trend has not as yet reached a stabilizing level.

When it comes to the item of taxes, I am not optimistic enough to think we can expect any relief in that direction.

In our company we have been able, up to now, to offset increased expenses by adding a greater volume of business, but as time goes on, we come closer to the ultimate saturation point. In 1945 we sold 102,300 cubic feet per domestic customer per year. We are now selling 150,000 cubic feet per customer per year, and in certain communities we sell as high as 200,000 cubic feet per customer per year.

I would say that we have now reached a space-heating saturation of perhaps 75-80 percent, which means we might expect to attain the sale of 180,000 cubic feet per domestic customer per year with 100 percent saturation. There may be horizons beyond 100 percent space-heating saturation, towards which a company might go with sales efforts for additional

▲Discussing relationship between operating costs and rates: (Left to right) W. J. Herrman, vice-president, Commonwealth Services, Inc.; B. C. Adams, president, The Gas Service Co., and Guy T. Henry, president, Central Indiana Gas Company

Abridged version of three-way discussion during spring meeting, A. G. A. Natural Gas Department, in Tulsa, Okla., May 8 and 9, 1950.

outlets for domestic use of gas. Then there is, of course, the industrial load.

All of our industrial business is subject to being shut off on an interruptible contract. I think it is obvious that with a given supply, the shut-offs become more frequent and more extended as that character of business is added. In other words, as industrial business is added, shut-offs occur at higher temperatures and thereby limit the earnings through the addition of industrial business.

- **It is my opinion that the solution to problems of rising operating costs is either increased business, which may or may not be obtained, or increased rates.**

Getting back to the domestic business, revenues of the distributing companies have been increased due to the increased domestic heating load. In our area both coal and oil have priced themselves right out of the market. However, it is a bad load factor business, and places a terrific demand upon both the pipeline supplier and the distributing company. While the competition from coal and oil is diminishing, we have serious competition from the electric industry and we must, of necessity, maintain a high standard of service.

One of our pipeline suppliers is proposing demand-commodity rates, which if approved, would raise the cost of our gas at the town border 50 percent. Under the terms of the proposed gas purchase contract we would have to make a commitment as to our winter peak day requirements and take or pay for such nominations during seven winter months. In the event the nominations are exceeded, a substantial penalty is to be paid on the excess for a 12 months period after such excess occurs.

Also the five summer months demand is automatically established at 70 percent of the winter peak day requirements. The proposed schedule is applicable to all gas purchased whether for industrial, commercial, or domestic use. Such a tariff would impose a considerable hardship on our company for the reason that the area to which the tariff is applicable consists of small communities which have few or no industries. It would therefore be impossible for the company to find a market for summer gas.

Where we are obtaining franchises in communities which have never had natural gas, the franchise provides that gas will be furnished for cooking, water heating, and refrigeration; and for heating purposes to those customers whose heating requirements do not exceed 30 cubic feet per hour. For customers whose heating requirements exceed 30 cubic feet per hour, gas will be furnished for heating only to such customers as have their supply for heating purposes controlled by an outside thermostat which will shut off and turn on the gas supply at a predetermined temperature. Service under such conditions would make it necessary for customers either to provide themselves with standby equipment or to install dual-fuel equipment. There are several manufacturers of dual-fuel conversion burners and furnaces, and our research department is now developing a dual-fuel space heater which will be fully automatic. This is our solution to the peak load problem. We think the day will come when this method will be universal practice.

II. Increased costs and effect on operations

By GUY T. HENRY

President, Central Indiana Gas Co.
Muncie, Indiana

Many things have happened to our industry in the last few years. By and large, gas utility loads and earnings increased substantially during the war. Then in 1945 the Federal Excess Profits Tax was removed, which further increased earnings. Also, gas as a heating fuel for domestic and commercial purposes became very much in demand, due to its competitive cost. Along with these items, the pent-up demand for gas appliances "exploded" after the war and made sales just a question of manufacturers' output.

All of these things, together with the inherent complacency of the gas utilities, caused some operators to decide that the time was right to get rid of their two most troublesome operations. They planned to do this by reducing customer service or charging fees for it, and by turning over to the dealers the job of selling merchandise and developing gas loads—without material assistance from the utility.

The only thing that our industry has to sell is really not a commodity but a service. When we fail to render satisfactory service to the appliances in use on our distribution systems, competition will take our customers regardless of the comparative cost. The policy of turning over to the dealers the job of building gas loads and selling merchandise, although it sounds good, apparently is not working well. A recently published survey indicates that, since the war, 38,000 retail salesmen have been trained by the electric industry, as compared with 2,150 retail salesmen trained by the gas industry. Is it any wonder that we are losing out in the kitchen?

There is no simple solution to this problem. What I would like to emphasize is that whatever we expect to do must be done quickly. We must take bold steps in planning a campaign of load-building to meet the immediate urgency of the hour.

What I mean is that the normal sales methods that many of us have used in the past (such as a competent home service department and good advertising), while excellent tools, will not in themselves accomplish the purpose. These sales methods are basic, should be continued and, in most cases strengthened. But that such sales methods are not accomplishing a full-scale load-building objective should be clearly evident as we review annual production figures on gas ranges, gas refrigerators and water heaters, as compared with similar production figures on electric ranges, refrigerators and water heaters, then relate this comparison to the figures of ten years ago.

To those who realize that the basic domestic load is cooking and water heating, the warning signal has been up for some time—our competitors have done a better selling job than we have.

The cooking and water heating load is not ours by succession, notwithstanding the fact that gas is the preferred medium of cooking and water heating in the home and in the commercial field. To some degree, we must recognize that we have failed to convince many of our potential prospects for ranges, water heaters and refrigerators. It does not make sense that in some of the large cities serving natural gas at reasonable rates more than 20 percent of the wired homes cook electrically.

At the present time, with gas ranges selling only on a two-to-one basis with electric, and with more than 20 times as many electric refrigerators sold as gas re-

frigerators (these figures include all bottled gas sales), we need to "build a fire" under our sales organizations, to get them off their seats and into the homes of our customers.

We need a new concept of sales methods to meet this competitive situation. A change in our thinking must originate among the top sales personnel and management. They first must be convinced of the need for old-time creative sales artists willing to "scout out like a hound dog" new sources of revenue among our customers, as well as to make sure that new homes and new business establishments are fully equipped with gas appliances.

- **To those who realize that the basic domestic load is cooking and water heating, the warning signal has been up for some time—our competitors have done a better selling job than we have.**

We need a plan of action almost foolproof in application, which will rapidly develop the domestic, commercial and industrial usage of our product not only for the basic load of cooking, water heating and refrigeration, but also the air conditioning load, which quickly fills in the "summer valleys." Nor should we forget the new loads, such as incinerators and driers, which help to flatten out "peaks."

Tremendous inroads have been made into the commercial cooking field by competitors who have invaded this market for the very basic reason that the gas utilities made no attempt to protect the market. Although we know that gas equipment is cheaper to use, cheaper to buy, more flexible, and easier to control, our customers are not always sure of these facts after hearing the pointed story of a well-trained, electric-minded salesman. Again, it is simply personal contact that is needed.

Equally important in our planning is the job of organizing a competent staff to make sure that we obtain the new apartment-house load. This market takes specialty men, who must be given broad latitude to meet a very serious competitive situation. Generally speaking, there is insufficient profit in this competitive field to make it worthwhile for a dealer to spend any time developing the load. There, again, the load is going by default, due to a lack of real interest and lack of plans for handling this particular market.

In my opinion, it all points to the need for increased customer contact on the part of well-trained utility salesmen skilled in developing our business. We must revive the lost art of house-to-house calls, and we might well face the fact that we are the ones to do it. Certainly it has been shown that the dealers will not.

We must constantly bear in mind that a great majority of our customers are in the economic bracket of society where the choice of equipment need not always depend upon rock bottom purchase price or cheaper operating cost. Also, we must never forget that great competition from every source—automobile dealers, beauty shops, resort hotels, and other luxuries —constantly will seek the customer's dollar which might otherwise be used to purchase gas equipment.

I urge you to build a sales organization that can go into the customers' homes, and to the dealers and dealer salesmen engaged in selling gas appliances, and tell the real story of gas as an all-purpose fuel. Have them tell the *economy* story, as compared with other fuels; have them tell the *flexibility* story—the fuel with a "thousand" heats between high and low; and have them tell the *dependability* story (which we in the industry consider so vital but forget to tell the customer). Have your salesmen tell *all* the other advantages of gas. If you do this your problems of increased costs and their effect on operations will not be "thorns upon your crowns!"

III. Earning requirements and rate design

By W. J. HERRMAN

Vice-President, Commonwealth Services Inc., New York, N. Y.

My predecessor in Commonwealth & Southern, Frank A. Newton, was an early authority on rate design. The principles he promulgated many years ago are still accepted as basic. Writing in *Public Utilities Fortnightly* in 1929, he laid down three fundamentals of sound rate design:

(1) Adequacy—over-all income must cover over-all costs including fair return.

(2) Class rates—charges must be reasonably related to the costs of supplying the various classes of service

(3) Competitive—rates must take into account the value of the service to the customer and should be designed to promote and hold the business.

While Mr. Newton's fundamentals may appear obvious and elementary, one should not jump to the conclusion that they are easily effectuated. Yet unless all three are reasonably fulfilled, the utility almost invariably will find itself in trouble over the longer term. My assignment is to discuss these problems as they relate to the natural gas distribution industry.

The first point is over-all adequacy of income. I suggest at the outset that the adequacy of earnings should not be measured solely by the spot rate of return on a rate base or any similar individual yardstick. Any such measures, to be useful, must be studied in relation to the past history of the company and its future prospects and to the accomplishments of other utilities and other industries.

I do not go along, for example, with the idea that earnings adequacy is a static concept which can be evaluated by a fixed formula, regardless of changing conditions. I believe, further, that the adequacy of earnings cannot be determined without a careful investigation of the particular facts surrounding each individual situation.

What are some of these factors and how do they affect the average natural gas utility? In my opinion the more important include:

(1) The large increase in the cost of capital additions and replacements as compared to existing book costs. I recently had occasion to compare the replacement cost of mains by a large western gas company with the book costs at retirement. The spread in cost exceeded four-to-one, and this ratio covered a complete cross-section of retirements that could be considered quite representative.

Over a period of years, $300 of new capital will have to be raised for each $100 now outstanding—merely to maintain the existing main system of that company. If a company is expanding rapidly, the situation will be aggravated correspondingly. The serious impact that these price changes have on the financial program of the gas utilities is self-apparent. The consequent need for increased earnings if existing equities are to be maintained undiluted is also clear.

(2) Another factor, the importance

of which is sometimes overlooked as an element in earnings requirements, is the cost of capital, i.e., the rate paid for money. Cost of capital, and the related factor of rate of return, depend primarily on the risks and prospects of the business in relation to other opportunities available to the prospective investor. In this connection, during a time like the present when industry in general is earning a high nominal rate of return on investments made in prewar dollars, it is unsound to apply capital costs predicated on current post-war earnings-price relationships to a prewar original cost rate base of a public utility.

- **To be consistent, either a current fair value rate base should be used, or the rate of return should reflect the higher percentage rates being earned in unregulated industry. Otherwise a deficient end result is obtained which in time will adversely affect the utilities' credit.**

(3) A third measure of earning adequacy is the value of the service—a subject which I will mention again. At this point I wish to point out only that ability to produce a valuable product for sale is an important plus factor in the determination of proper over-all earnings. Reverse the thought and consider what would happen to your space heating business if the price of oil were to fall and remain substantially below the equivalent Btu price of gas. Then you will appreciate why value of the service must be taken into the earning equation.

These are only some of the more important considerations which must be examined to determine over-all earnings adequacy. They are enough to indicate that the answer is not necessarily obvious, but requires careful study and analysis.

Note that I have not mentioned certain other factors such as increases in the cost of labor, materials and supplies, or the cost of gas, not because they are not important, but because they are clearly apparent and understandable. It is the intangible and indirect costs that are most dangerous—considerable damage may be done before they are fully evaluated.

Mr. Newton's second requirement was that rates should be designed so as to produce revenues from each class of customer reasonably related to the cost of supplying the service. This is another of those "taken for granted" principles which everyone approves but does very little about.

We know, of course, it is impossible in practice to allocate costs exactly. We know also that if we could make such exact allocations we still would not be able to reflect them precisely in our rate schedules. I think it is a serious mistake, however, to assume because we cannot achieve perfection in cost analysis and its application to rate design, that we should neglect the principle or discard the tools which are available to make it workable on a practical basis.

Maintenance of a good load factor is of course highly desirable in any business, but it is especially important in the utility field where the amount of fixed capital is so large in relation to revenues. In the manufactured gas business, where residential use is limited largely to cooking and water heating, the fluctuations in consumption are of an hour-to-hour nature and the demand can be economically equalized through the use of local storage holders. The resulting annual load factor is correspondingly satisfactory.

All this has changed, of course, with the coming of cheap natural gas and the expansion of service for space heating and to industry. Space heating, in spite of its poor load characteristics, was for a while an exceedingly profitable incremental load. As long as the same customers could be supplied additional gas through the same facilities the utility was able to carry through to net before taxes almost 100 per cent of the difference between the price it paid for gas and the price it received under the follow-on or end charge of its rate schedule.

Since these follow-on charges were designed in the first instance for small volume users, the end rate was usually high in relation to the cost of gas. The profit resulting from a large increase in use was correspondingly large. Further, because the cost of competitive fuels was very low, the customer space heating saturation was also generally low, and most companies were able to get along with relatively small expenditures for new facilities.

This situation lasted until after the war and the lifting of price controls which suddenly made natural gas a premium fuel at bargain prices. Overnight, every residence was a new candidate for natural gas space heating. And since the average utility and its supplier were not equipped to handle the resulting huge increase in demand, space heating suddenly was converted from an incremental cost load to an average cost load. In fact, since new facilities had to be constructed at postwar price levels, the unit cost of space heating service tended in some cases to exceed prewar average unit costs.

The first and most apparent solution to these new problems was to build up summer sales to industry so as to fill the valleys created by the winter space heating peaks. Such sales are usually on an interruptible basis. Although prices have been relatively low, the profit margin has tended to be high because the related capital investment is small, and over-all earnings have been supported accordingly.

The point is that in stopping with simple load factor correction we fail to meet Frank Newton's second commandment—that rates should reasonably reflect costs. The fact that a utility is able to bolster its revenue from interruptible sales taken on at low incremental costs presumably should not justify the sale of gas for space heating at less than cost. For one thing, interruptible sales are highly competitive and may be lost to the oil or coal company if prices of those fuels decline in a period of depression.

Ideal solution

The ideal solution, of course, is that each class of business should stand on its own and support its own costs. This is especially true of the space heating business where the value of the service is ordinarily in excess of the price charged.

Mr. Newton's third rate criterion is closely related to the second. Under certain conditions the two may be somewhat contradictory. As I indicated briefly, a utility cannot sell a product for more than its value, regardless of its cost. Conversely, it is frequently desirable and indeed necessary to fix a price in excess of the theoretical cost, if the price is supported by the value of the service. Let me give an illustration.

One of the important costs of utility service is the so-called customer cost—the expense of metering, billing and collecting, plus the fixed charges on the meter and service, etc., all of which are independent of the volume of gas sold. In a recent study *(Continued on page 60)*

Collective contracts or conflicts?

Free enterprise is safe only if reason replaces rancor in collective bargaining

Ewing Galloway

By E. WIGHT BAKKE

Director of Labor Management Center, Yale University

What is it that makes collective bargaining something other than a business-like negotiation session?

In the first place, collective bargaining is considered by the participants, I think on both sides, not merely as an alternative to battle, but as an alternative form of battle. It still is a group of opponents who are locked in conflict. They just moved into the conference room from the picket line. The issues are just about the same and the attitudes have been modified only slightly. The objective, victory, is still the same.

Unions still speak of winning their contracts, and management speaks of winning out or losing on their stand for or against this or that. And even when they develop a conception that collective bargaining is an alternative to battle, it is one to be tried only if it gets them what they want without a strike or a lock-out.

In the background is always the awareness that if they don't make a deal this way, they will slug it out, and may the strongest man win.

The first difficulty is that the psychology of battle still characterizes our collective bargaining. The second obstacle to making bargaining factual and reasonable between management and labor leaders lies in the difference in the basic character of the organizations which each represents.

First of all, business is a risk-taking organization. The union is a security-seeking organization.

Because business is a risk-taking organization, it has need for freedom to adjust to unforeseen circumstances, to take quick advantage of the breaks, to move swiftly before a competitive advantage is lost. Because the union is a security-seeking organization, one of the fundamental objectives is the reduction of the area of employer discretion. It wants to get wages and conditions set for a definite period. It is interested in getting binding commitments from management on long-term matters, on the fringe-of-wage payments such as vacations with pay, health benefits, pensions, and the like.

The second basic difference in the character of the organizations is this: Internally, management operates within a business system; unions operate as a political system. The success of union operations depends upon the political solidarity of its membership. This solidarity is represented by the firing and hiring, the goals of economic rewards techniques well-known by political leaders.

Suppose management had to get the consent of the stockholders before practically every major decision it made? Suppose their operations involved the consistent and detailed activities of the stockholders?

Suppose that a stockholder who was

Excerpts from paper presented at National Conference of Gas and Electric Utility Accountants in Louisville, Ky., April 17-19, 1950.

dissatisfied with this day-to-day activity could object not by selling stock to someone else, but by withdrawing his capital from the business. Under those circumstances, management would be compelled to develop, in relation to their stockholders, the same kind of political strategies which union leaders must develop in relation to their membership. The ability of management to make binding decisions on a factual basis, which they had the power to carry through in their dealing with others, would be immensely complicated. Management's stockholder relations would become political and not solely business relations.

This internally political characteristic view is a particularly hard one for businessmen to understand and deal with. Its impact on wage negotiations is particularly strong. Wage increases, like tax reductions, better streets, more buses, higher tariffs, and the Kerr bill, become a political symbol of political service to some people. As such, the major consideration is seldom their economic portent.

One of the most important variations in the attitude towards wage problems of union leaders and management which grows out of this difference between a business and a political system, has to do with the reaction to incentive wages. To many businessmen concerned with reducing unit costs and increasing production, it seems obvious that gearing wages received by individuals to the amount they produced is plain common sense.

To the union leader, on the other hand, concerned with political strategy for maintaining group solidarity, competition between individual and individual, if the potential spread is too great, may appear as a threat.

A third difference in the basic character of the union and management lies in the fact that a union is a device for continuously changing the balance of economic rights in favor of the workers. A business is principally a device for acquiring economic advantage within the framework of established rights. It's one of the major functions of unions to alter this balance of rights, and the rewards as between employers and workers.

I think that we would be closing our eyes to one of the most obvious, most significant developments of our time, if we did not recognize in American industrial and political life a basic change in the relative degree of power exercised by leaders of business on the one hand, and the leaders of labor on the other. This basic change is a fulfillment of one of the major objectives of the unions.

Unions, therefore, find that they simply must challenge management's ability to stay and to operate within the existing balance of rights. A union is a right-changing device. It is easy therefore for management to see the issues in collective bargaining not as things in themselves or as facts to be dealt with—a pension, a wage change, a vacation, a participation in the safety program—but as a movement in this shifting balance of power.

The next obstacle to making collective bargaining factual and reasonable is that the traditional methods of the two organizations are different. Men trained in different methods cannot be expected to understand completely the reactions of the other. In negotiations, business and industry are an institution.

It is fair to say that the present generation of businessmen has received its training in a school of more orderly and reasonable procedures. The making of contracts, the substantiating of their relations by the contract, is the rule.

The school of hard knocks in which the present generation of labor leaders has been trained is of quite a different source. There is a tradition of struggle for existence, of power to impose settlement as the chief guarantee of getting them.

Under these conditions, the wage agreement becomes not so much an instrument for mutual advantage in which considerations are both given and received, but a treaty of peace, imposed by the victor on the vanquished.

Lastly, the difficulty in making collective bargaining reasonable and factual is that facts are not always what they seem to be. All facts may be born free and equal, but a rapid inequality develops. Here are some of the difficulties about nailing down facts.

In the first place, it is hard to distinguish fact from bluff.

The union says, "All our men insist on this, and we will strike if we don't get it. The union has the financial power to back up a strike until we do get it."

Is that bluff or is it fact? Must management just take the union leader's word for it?

Facts or bluff?

Management says, "The condition of trade is bad. Our financial condition is poor. We have got to spend our money this year for technical improvements or we will go out of business. We can't make any wage increase without raising prices."

Are those facts, or examples of bluff? Can they be verified without disclosing confidential internal operating figures? Is management usually willing to do that, or must union leaders take management's word?

Until the time men can have the real facts before them, they cannot be expected to reason, for men cannot reason without facts.

A second characteristic of facts, is that they are presented as they are presented—they are not absolute, but are relative to a purpose, for those who present them. Now, that is not to say that they are inaccuracies, or that they are untruths, but that they are selected for a purpose.

For instance, the union says, "It is area practice to have two weeks vacation with pay." They make a survey of a group of individuals to show it. Management comes back with another survey on an industrywide basis, which they say is more relevant to their situation, and they show it isn't industry practice. Which is fact?

The answer is, both are facts, but that

Secretary

● If the Secretary writes a letter, it is too long
If he sends a postal, it's too short.
If he issues a pamphlet, he's a spendthrift.
If he attends a committee meeting, he is butting in.
If he stays away, he's a shirker.
If the attendance at a luncheon is slim, he should have called the members up.
If he does call them, he is a pest.
If he duns a member for his dues, he is insulting.
If he does not collect, he is lazy
If a meeting is a howling success, the program committee is praised.
If it's a failure, the Secretary is to blame.
If he asks for advice, he is incompetent.
If he does not, he is bullheaded.
If he does as he is told, he is blamed for his action.
Ashes to ashes, dust to dust, if the others won't do it, the Secretary must.

—*Iowa Master Plumber*

Research

(Continued from page 17)

dustry. Perhaps we should recall and adopt the policy of the Post War Planning Committee which not only published its 31 postwar recommendations to the industry but set up an Action Committee to put them into effect.

Perhaps in the future, when a project uncovers technical data that affords the possibility of a substantial improvement in appliance design or basic performance, we should not be content with presenting and discussing that data as in the past. Perhaps we should appoint another committee to get that data into actual use.

We might call that a Project Action Committee and place on it the representatives of those gas companies which feel that the potential improvement is important enough for them to indicate the minimum number of appliances which they would dispose of directly and/or through their cooperating dealers. With that information, we might invite as members the manufacturer or manufacturers who feel that such a product improvement is promising and important enough to his future for him to agree to develop it and put it into production.

I realize that not all utilities would be willing to commit themselves to the purchase and sale of an improved appliance at the necessary higher initial cost. Nor would all manufacturers be willing to produce such an appliance. But I believe that in most cases of important improvements, a starting basis would be provided of mutual benefit to both participants. Once started, the merits of the improvement would determine the scope of its acceptance and availability by the industry as a whole.

No field for industry action offers greater promise of industry progress than does A. G. A. utilization research.

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does not resolve the issue.

It is quite evident that accounting is not a precise science. Yet folks generally assume that it produces a precise profit figure which is a fact. The truth is—and who am I to say what the truth is?—there are a variety of methods and ways of handling financial figures, equally respectable. The company chooses those methods best adapted to its purposes, whatever those purposes may be—keep taxes as low as possible, to establish a reputation for the firm, to attract new capital, to have figures useful in the kind of investment pricing and wage decision and activities that it is undertaking.

I think there is nothing reprehensible about that. All I am saying is that it destroys the character of profits as reported as a fact. The item "profit," is a fact not in an absolute sense, but relative to the method used, which in turn is relative to the purpose sought.

A third difficulty about facts is that they are used as tools, not as a standard for measuring the soundness of a decision.

A fourth factor is that a fact is not a fixed and definite thing, but something which is shaped and colored by the interpretation of the person comprehending and using it. Most folks would think of wages, incentives, and hours of work as facts, but they aren't black and white things.

Take wages, for instance. To management, that word means "An item on the cost sheet." To the worker, "The basis of all my living." To the union, "A symbol of political service."

What does the incentive system mean? To management, "A way of stimulating more individual production and gearing rewards to production so that the unit costs may be lowered." To the worker, "A means of making me work my tail off." To the union, "A technique for re-introducing individual rates and setting man against man in competition, a way of undermining the common rule."

What do hours mean? To management, "A period of work which is owed to them by the worker, a period during which a certain amount of product can be put out." To the worker, "A period taken from real living to be made as short as possible." To the union, "A device for increasing take-home pay through overtime."

What are profits?

What do profits mean? To management, "An indication of management's ability to survive and to deliver their responsibilities to stockholders." To the workers, "A surplus we didn't get." To the union, "An indicator of the ability of the firm to pay more wages."

Here are a few suggestions:

(1) In your own conferences and schools, get together on your theory. Then get together on trying your hand at getting the public to understand why reputable accountants can come out with profit figures $120 million apart. You have a public relations and public education job to do on the uses of and the techniques of your trade.

(2) Pressure your management for simplified but accurate and meaningful financial statements for workers, union leaders, and stockholders. If you can get the workers to understand what you turn up as the financial condition of your company, you will find that a lot of the heat will be taken off the union leaders who really want to be reasonable.

(3) Get included in your employee information books explanations of the terms you use, such as depreciation, reserves, undistributed profits, net worth—even such understandable terms as liabilities and assets.

(4) Urge the setting up of joint union-management fact-finding commissions to precede collective bargaining.

(5) Figure out ways of increasingly opening books. The startling success of those negotiations in which management has found ways to lay its financial data in very complete form before the workers, ought to indicate that there is an opportunity for experimentation and development.

(6) Make a real and sustained effort to get union accountants into your professional organizations and on the programs of your professional meetings. It's little enough that we can do, but it's in the right direction.

Making collective bargaining reasonable, factual, business-like negotiations is difficult, but I think it is not impossible. The stakes are high. Unless we can develop it that way and move away from class warfare in this collective bargaining business, you accountants and we professors are not going to have much of a place, save as slaves of those who do the actual fighting.

But more important than our position is this: The future of free private business is questionable unless we can move collective bargaining in that direction. If we can do that, we can integrate this growing and purposeful union movement with our business society. Unless the future can count on us to do that, it is my firm conviction that we will not be here as free businessmen and as free union leaders to be counted.

D. W. REEVES, *CHAIRMAN* • CARL H. LEKBERG, *VICE-CHAIRMAN*

School bell draws commercial gas men

▲ Fred H. Groen, Jr., vice-president, Groen Manufacturing Co., explaining the workings of a self-contained, gas-fired stock kettle to the nearly 100 gas men who attended the A. G. A. Commercial Gas School held in Cincinnati, Ohio

New students who have just joined the gas industry, apprentices, and seasoned veterans joined forces last month at the second Commercial Gas School sponsored by the Association since the war.

Nearly 100 commercial gas men from member companies in 20 states and several foreign countries attended classes during the week of May 1 in Cincinnati, Ohio. Included among the students were four representatives from Vancouver and Victoria, British Columbia; Winnipeg, Manitoba; Hamilton, Ontario; and Bogota, Colombia.

Besides lectures and reviews of large volume cooking subjects and appliances, the course included talks on commercial gas applications outside the cooking field. Included among the staff of 24 instructors were representatives of gas companies, equipment manufacturers, American Gas Association, hotels and consumer groups.

Discussions which followed the lectures on water heating indicated a marked interest by gas companies in getting this hot water load for multiple-family dwellings, as well as different applications in eating establishments. Data presented on sizing of water heaters and boilers was discussed in detail.

Several of the talks emphasized that the gas industry has the tools and equipment to meet any form of competition. The main requirement is to find improved means of putting this material to work and building up aggressive sales approaches.

Completeness was a by-word of the school. Even a kitchen planning lecture was included. The average commercial gas man is not required to be able to design kitchen layouts for prospects. How-

Men working! Some of the Commercial Gas School students concentrating on their final examinations. In the immediate foreground is George W. Fieser, a newcomer to the gas industry and son of Frank J. Fieser, well known in the industrial field ▲

▲ One afternoon was devoted to demonstrations of roasting, baking and deep fat frying by Swift & Company

E. S. Fields (center), vice-president, The Cincinnati Gas & Electric Co., greeting Carl H. Lekberg, Section vice-chairman. Observing are: Terry Hart (extreme left), chairman, Sales Training Committee, and lecturers W. D. Relyea, Newark, N. J., and Harry B. Wilson, Brooklyn, N. Y.

▲ Sizing up the situation are these lecturers for the Commercial Gas School: (Left to right) F. A. Kaiser, Detroit-Michigan Stove Co.; John Goward, Michigan Consolidated Gas Co.; A. Buenger, Hotel Gibson, Cincinnati, and Julian E. Clark, Nashville Gas & Heating Company

ever, he should know the fundamentals so that he can confer intelligently with customers or kitchen equipment representatives regarding selection of gas-fired appliances for cooking, water heating, space heating and air conditioning.

"What the Restaurant Operator Expects from the Gas Industry" was outlined by a leading hotel expert on Monday afternoon. Speaking extemporaneously, he discussed service policies and methods of educating restaurant operators on gas-fired equipment. A second hotel man presented an inspirational talk on sales technics.

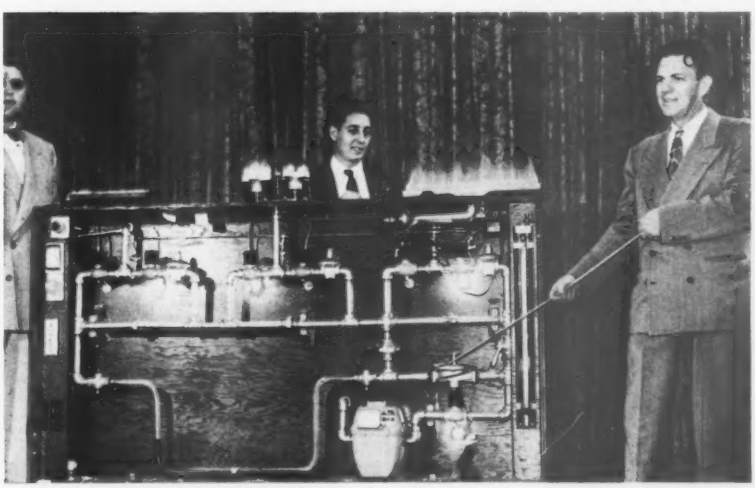
One of the highlights of the school was an entire afternoon devoted to a demonstration of roasting, baking and deep fat frying. Students were shown that the flexible gas-fired oven can do several types of cooking at one time, all under complete thermostatic control. Ribs of beef were roasted, several dozen different types of yeast rolls were baked, dozens of cup cakes and several pies were produced, all in less than three hours.

Basis of the commercial gas school course was mainly the A. G. A. publication "Commercial Kitchens." Prepared lectures were given the students on those particular subjects outside of the manual. Complete sets will be available at a nominal cost.

Every student attending the school took an examination. Corrected examination papers will be returned together with a certificate as soon as the work is completed.

The next A. G. A. Commercial Gas School will be held in the spring of 1952.

R. P. Hopper (left) removing roast used in meat shrinkage test, while L. A. Allsen mixes biscuit ingredients



▲ L. J. Fretwell (right), Oklahoma Natural Gas Co., using this intriguing arrangement of pipes, valves and controls to show how burners are affected by differences in gas pressures, inadequate piping and other factors in commercial installations

A. G. A. booth focal point for information at foundry show

Foundrymen learn story of gas

The Association's Industrial and Commercial Gas Section was one of 250 exhibitors at the fifty-fourth annual meeting of American Foundrymen's Society held during the week of May 8 at the Cleveland Public Auditorium.

An information center was maintained by the Section. Through the courtesy of The East Ohio Gas Company, a competent staff was always in attendance at the A. G. A. booth to answer questions and supply other information.

Considerable interest was evidenced in smoke and fume incineration, particularly from core ovens. This is due principally to the nation-wide agitation by communities to materially reduce air polution by industries. This application of gas for fume and smoke incineration is comparatively new but promises to be a very attractive load for gas companies.

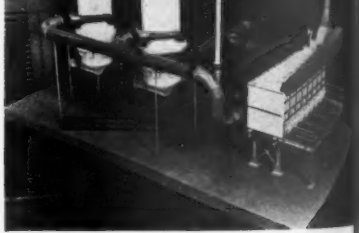
Other inquiries centered on dual fuel burners, conversion burners, and stand-by equipment for the many uses of gas in the foundry field.

Organizations exhibiting gas equipment were: The Campbell-Hausfeld Co., Harrison, Ohio, which had an operating gas-fired aluminum crucible furnace in the exhibit of National Engineering Co., Chicago. The latter firm demonstrated their sand decarbonizer, using the reclaimed sand to make molds in which aluminum novelties were cast. The sand reclaiming equipment utilized an air heater with 800,000 Btu per hour to recondition the sand at 1700° F. The Foundry Equipment Co., Cleveland, showed a gas-fired tower core and mold baking oven operating in cooperation with the two exhibitors just mentioned.

Other exhibitors were: Lindberg Fisher Division, Lindberg Engineering Co., Chicago—melting furnaces; The Carl Mayer Corp., Cleveland—mold and core ovens; J. O. Ross Engineering Corp., New York—cupola hot blast system whereby a gas-fired air heater supplies the hot air at proper temperature to materially increase the production speed and efficiency of a cupola; The Spencer Turbine Co., Hartford—a display and information center on blowers for gas premix and booster systems; Stroman Furnace and Engineering Co., Franklin Park, Illinois—gas-fired melting furnaces for both ferrous and non-ferrous metals.

Operating gas-fired core drying and mold baking oven used to process molds of adjacent exhibitors ▲

This gas-fired aluminum crucible furnace was the only live melting equipment exhibited at Foundry Show ▼



▲ Scale model of cupola air preheating system—newest gas application in foundry operations

Dynamic gas technology unveiled at Chemical and Production Conference

Production men in key role

Technological problems of an expanding gas industry, particularly those created by the rapid extension of natural gas lines, were under concentrated attack during the annual Production and Chemical Conference held in New York, May 22-24.

Under the sponsorship of the Association's Operating Section more than 30 major reports were presented on research, engineering, and chemical developments. In addition, seven luncheon conferences provided a forum for an exchange of experiences on specialized individual problems. A near record gathering of approximately 700 delegates from all parts of this country and several foreign nations took part.

G. V. McGurl, Koppers Co., Inc., Pittsburgh, chairman of the Chemical Committee, and J. P. Stephens, The Cincinnati Gas and Electric Co., chairman of the Gas Production Committee, alternated as presiding officers. They were ably assisted by the committee vice-chairmen, A. E. Sands, U.S. Bureau of Mines, Morgantown, W. Va., and G. T. Bentley, Michigan Consolidated Gas Co., Detroit, and the various subcommittee chairmen.

The dynamics of change which have placed great emphasis on new methods of gas production were stressed by H. Carl Wolf, managing director, A. G. A., who greeted the delegates at the opening general session, Monday morning. Mr. Wolf paid tribute to the record of gas production, which, he said, parallels the record of America. Gas production men today, he added, hold the key to the growth of our industry.

New horizons for gas are being opened up by PAR-financed A. G. A. research on utilization, natural gas production and transmission, and gas production problems. This point was brought out by T. L. Robey, secretary, General Research Planning Committee, in a forthright review of progress to date. As an example in the field of industrial gas utilization, Mr. Robey reported the possibility of adopting military techniques where heretofore unheard of quantities of heat are released instantaneously by detonation rather than by ordinary combustion methods.

"It appears possible," he said, "to combust gas by a rapid series of explosions, thus by-passing the ordinary limiting factor of rate of flame propagation."

Directing attention to gas production research results, Mr. Robey pointed to promising results of the fluidized gasification project, now in the pilot plant stage of development. This new method, he stated, "offers a continuous means of gas production under unusually well controlled—say plus or minus 10°F—cracking conditions with consequent control of products." He showed that the method is economical, the apparatus requires small ground area, and the process can be regulated to produce uniform cracking with consequent improvement in gas characteristics.

In conclusion, Mr. Robey made a plea for more leeway to investigate the so-called "screwy" ideas that occur in all fields of research. "Gold is where you find it," he declared, "and gold will be found if we can search widely enough."

Experiences at Cambridge with the Hall High Btu Process and comparison with operating results of the Twin Generator Light Oil Process were presented by Gordon G. Howie, vice-president and general manager, Cambridge Gas Light Company. Total holder cost with the twin generator process, including fuels, supervision, labor, miscellaneous operating cost and maintenance amounts to 95.1 cents per Mcf, Mr. Howie stated. Indicated similar holder cost over a one-month trial period on the Hall process using Aruba oil, is 73.4 cents, or a saving of 21.7 cents per Mcf of 989 Btu gas.

When fuel costs minus residual credits are considered, Mr. Howie added, "we arrive at an indicated figure of 49.1 cents." This latter figure, he noted, which it is believed can be lowered substantially, is a good figure to bear in mind when

▲Conference officers: G. V. McGurl (left), Koppers Co., Inc., chairman, Chemical Committee, and J. P. Stephens, The Cincinnati Gas & Electric Co., chairman, Gas Production Committee

considering standby gas or peak shaving gas for natural gas.

Turning attention to accident prevention, G. A. S. Cooper, Public Service Electric & Gas Co., Newark, N. J., declared that safety and operation are inseparable.

"The executive who side-steps safety and tries to make it a complete department, separate from his operating department, is trying to divide a man into two parts. This means there is just one man who can guard against accidents that almost happen. He therefore is the real safety engineer and he happens to be the boss of the men doing the work," he concluded.

The Monday morning session closed with a progress report on the Bureau of Mines' program of appraising minable reserves of coking coal. Ralph L. Brown, of the Washington, D. C., bureau staff, was the speaker. Coals of the Appalachian fields are being covered first, Mr. Brown said, and reports on five counties will be published shortly. Companion reports on washing and coking characteristics are expected to provide valuable information.

Two important contributions to the Monday afternoon general session were supplied by the Operating Section's newly formed Subcommittee on Plant Waste Disposal.

W. B. Hart, Atlantic Refining Co., Philadelphia, Pa., opened the discussion with background information on the disposal problem. He noted that in many cases the disposal problem is caused by domestic sewage rather than plant wastes.

Industrial concerns, he said, should first of all study the streams near their plants—particular attention should be paid to stream composition and base flow. The next step, he added, is to survey the industrial plant itself. Methods should be found to examine the chemical content of wastes and cut down their toxicity. Following this step, plant engineers should determine what processes are required to purify the wastes enough so that they will not be a menace to aquatic life, health or recreation.

After this work has been completed, the necessary equipment can be ordered, Mr. Hart explained.

L. F. Warrick, U. S. Public Health Service, Washington, D. C., praised the "outstanding cooperation" which the Health Service has received from industries in attacking the waste disposal problem. He noted that 26 industries to date have established a National Technical Task Committee on Industrial Waste. Main objective of this group, Mr. Warrick said, is to inventory, appraise, coordinate and promote research on methods for using, treating and controlling industrial wastes. The task committee also plans to create an effective working relationship among industry, federal, state and local agencies.

▲ Dinner meeting of Operating Section's Managing Committee: (Left to right) R. Van Vliet, Section vice-chairman; E. G. Campbell, Section chairman; W. R. Fraser, Detroit; George R. Smith, A. G. A., and A. C. Cherry, Cincinnati

Suggestions for maintaining a standby water gas plant, based on two and a half years of experience, were outlined by Harry Kaess, Minneapolis Gas Company.

"When converting over to natural gas, with resultant lower cost of gas, provision should be made for the cost of maintenance," he declared. "As in all gas operation, too long a period of neglect may prove extremely costly. It is the duty of every gas utility to provide for a maintenance schedule with the proper personnel. Individual planning can best be done by the individual operators setting up their own methods of inspection and repair."

Major event on Monday afternoon was a four-man symposium on reforming hydrocarbon gases. J. L. Turnan, Worcester Gas Light Co., presided as moderator. Panel members were as follows: O. B. Holman, The Philadelphia Gas Works Co.; J. S. Hurd, Public Service Electric & Gas Co., Nixon, N. J.; S. W. Horsfield, Long Island Lighting Co., Garden City, N. Y., and E. S. Pettyjohn, director, Institute of Gas Technology, Chicago.

Mr. Holman outlined his company's experience since its changeover from carburetted water gas and coke oven gas to natural gas.

Recent cost comparisons between fuel bed reforming and catalytic reforming show a differential of 3.5-4 cents a thousand cubic feet in favor of catalytic reforming, he stated. This is on a 530 Btu basis, with a comparable quality of gas made under each process.

On the subject of interchangeability, Mr. Holman declared that the hydrogen to inerts relationship is a guide as to whether the new gas is of a correct chemical composition.

"For cost reasons we want to keep the hydrogen to inerts ratio of the gas as low as we can," he said, "and still have a gas with satisfactory burning characteristics. . . . Studies have been made in our company that show savings of about $100,000 per year per tenth of a point on the hydrogen to inerts ratio."

Natural gas operation at the Central Gas Works of Public Service Electric & Gas Company was outlined by Mr. Hurd. The changeover has definitely revised the thinking of plant management and operators, he declared.

"Changes in rates of make, flows, etc., are dictated by such considerations as hydrogen inert ratio, lampblack tests, etc. Everyone is more conscious of the chemical composition and proportions of the various gases making up the final mixed gas.

"It has reduced the number of so-called dirty jobs that the men have to do. General plant cleanliness has improved and with it the morale of the men.

"It has practically doubled the plant gas-making capacity," Mr. Hurd continued. "Last but not least, there has been a substantial reduction in production costs."

Using slides, Mr. Horsfield opened

R. B. Paquette (left), chairman, Water Gas Subcommittee, shown with F. D. Howell, Brantford, Ont., speaker on natural gas sendout replacement

Members of panel on reforming hydrocarbon gases: (left to right) O. B. Holman, Philadelphia; J. S. Hurd, Nixon; J. L. Turnan, moderator; and S. W. Horsfield, Garden City. E. S. Pettyjohn, IGT, was fourth panel member

Gas production experts: (Left to right) E. S. Pettyjohn, IGT director and conference speaker; R. J. Chambers, Buffalo, and P. T. Dashiell, Philadelphia, former chairman of the Association's Gas Production Research Committee

Reporting on gas analysis and gas mixing at the Tuesday gas production session: H. E. Ferguson (left) and W. H. Isaacs, both of Chicago

Speakers on odorization practices: N. K. Senatoroff (left), Los Angeles, and E. E. Johnson, Richmond, California. At right are L. F. Warrick, U. S. Public Health Service, and S. A. Petrino, chairman, Plant Waste Disposal Subcommittee

Wednesday morning general session speakers: Carl A. Schlegel (left), chairman, A. G. A. Builders' Subcommittee, chatting with H. R. Linden, IGT

Head table at High Btu luncheon conference: (Seated, left to right) H. E. Fergoson, W. H. Isaacs, J. W. Carroll, B. M. Keys, chairman; (standing) G. G. Howie, alternate chairman; F. D. Howell, Leo P. Bresnahan, and E. E. Richardson

General sessions speakers on plant waste disposal and standby water gas plants: W. B. Hart (left) and H. G. Kaess

his discussion with comments on butane reforming.

"Experience at the Hempstead Works* indicates," he said, "that butane reforming can result in considerable savings in any carburetted water gas plant when the price of butane is about two cents lower than the price of the enriching oil normally used. This is particularly true if liquefied petroleum gas storage equipment is available at the plant."

Mr. Horsfield told his listeners that a new catalytic cracking plant for reforming natural gas is being constructed by the company. The cracking furnaces will be similar to these at the widely publicized Riverhead plant, but of a greatly improved design.

Reporting on A. G. A. Gas Production Research activities, Mr. Pettyjohn analyzed data obtained at the Chester, Pa., pilot plant on the manufacture of substitute gases. No one process is a cure-all for every operation, he observed. However, the small catalytic furnace is an excellent way of extending the operations of your plant. It must be remembered though, he added, that this plant has definite limitations.

A comprehensive story of synthesis gas production research by the Bureau of Mines at Morgantown, W. Va., was told

*A light oil carburetted water gas plant.

Carbonization and Coke luncheon conference: (Left to right) H. K. Merker, Forrest D. Miller, chairman; H. C. King, alternate chairman; and I. J. True

LP-Gas luncheon: (Seated) Dean Seifried, C. P. Keeley, W. H. Kramer, alternate chairman; S. W. Horsfield, chairman; E. W. Evans; H. E. Thomas, A. B. Lauderbaugh, J. L. Turnan, S. C. McLaughton, H. V. Precheur, G. R. King

Chemistry luncheon: (Seated, left to right) G. V. McGurl, J. F. Foster, chairman; W. H. Fulweiler, H. H. Hakewill; (standing) H. M. Killmar, alternate chairman; R. D. Schmidt, T. B. Tinney, W. K. Beard

▲ Participants in symposium on synthesis gas production at U. S. Bureau of Mines station in Morgantown, W. Va.: (Left to right) L. D. Schmidt, J. H. Holden, L. P. Rockenbach, G. R. Strimbeck, H. W. Wainwright and A. E. Sands. Event was a feature of the Tuesday morning Chemical Committee session during the recent conference in New York

for the first time at the Chemical Committee session on Tuesday morning. The committee chairman G. V. McGurl, Koppers Co., Inc., Pittsburgh, Pa., presided.

Opening the four-paper symposium, L. D. Schmidt, chief of the Morgantown Station, discussed three years of research and development on the production of synthesis gas from coal. He also described the importance of the work to the synthetic liquid fuels program and the manufactured gas industry.

A second paper by John H. Holden and C. W. Albright discussed a fluidized coal feeder which has contributed greatly to the success of the bureau's gasification process. Use of this apparatus has made possible the controlled feeding of pulverized coal to the gasifier at an extremely uniform rate.

A third paper by G. R. Strimbeck, John H. Holden, L. P. Rockenbach, J. B. Cordiner, Jr., and L. D. Schmidt, was entitled "The Morgantown Pilot Plant Gasification of Pulverized Coal with Oxygen and Highly Superheated Steam."

Calculation indicates, the authors said, that where nitrogen is desired in the gas (e.g. ammonia synthesis gas) or where a moderate nitrogen concentration can be tolerated, gas can be produced continuously from pulverized coal without the requirement of an oxygen plant.

For such purposes, they added, heat requirements of the gasification process would be supplied entirely by the use of superheated steam and air. Gas made in this way should be suitable for production of producer gas with a heating value of over 200 Btu per cubic foot.

Bureau representatives reported that experiments using steam at 250° to 2900°F indicate that the process is superior in oxygen consumption to any other pulverized coal gasification process yet reported. Experimental results also prove, they added, that any coal from lignite to anthracite can be used—including strongly coking bituminous coals.

Final paper of the symposium discussed "Organic Sulfur in Synthesis Gas

Water Gas luncheon conference: (Left to right) R. S. Emanuel, H. P. Richmond, alternate chairman; A. G. Hall, chairman; R. B. Paquette and C. A. Gallagher ▶

▲ Oxygen luncheon conference: (Seated) W. D. McElroy, W. C. Schroeder, C. R. Downs, chairman; L. L. Newman, alternate chairman; A. R. Powell; (standing) C. C. Wright, W. E. Lobo, L. P. Gaucher, R. R. White and Evan A. Johnson

Plant Waste Disposal luncheon: (Seated, left to right) T. B. Tinney, W. B. Hart, L. B. Bowman, chairman; (standing) W. W. Hodge, S. A. Petrino, Dr. F. E. Vandaveer, alternate chairman of the Tuesday afternoon meeting in New York ▶

Industry forms industrial waste task group

Representatives of 22 major American industries during recent organizational meeting in Washington, D. C., of the new National Technical Task Committee on Industrial Wastes. Manufactured gas industry representative is A. Gordon King (far right), secretary, A. G. A. Operating Section. Executive Secretary L. F. Warrick addressed A. G. A. Chemical and Production Conference

CLOSE TEAMWORK between industry and government on the waste disposal problem was achieved recently with formation of a National Technical Task Committee on Industrial Wastes. The manufactured gas industry, one of 22 major American industries on the committee, is represented by A. Gordon King, secretary of the Operating Section, American Gas Association.

Nine major functions have been assigned to the new task committee:

(1) To inventory, appraise, coordinate and promote research and development of methods for using, treating and controlling industrial wastes.

(2) To facilitate the devising and adoption of uniform methods of measuring and evaluating trade wastes in water quality control.

(3) To stimulate more effective working relations on technical phases of trade waste problems among industry and federal, state and local agencies.

(4) To employ the facilities of the government's Environmental Health Center in those areas of research and development wherein they would be the most valuable to the over-all program.

(5) To aid in establishing those areas where major needs exist for financial assistance in obtaining basic information on industrial waste problems in water pollution control.

(6) To stimulate further the adoption of practical methods—known or yet to be developed—for reclaiming, reducing and treating wastes impairing natural stream conditions.

(7) To achieve wide dissemination of information on technical developments and accomplishments of industry; maintain suitable relations with technical societies, professional organizations, trade associations, and such other groups as issue publications reaching persons concerned with water pollution problems.

(8) To aid in promoting training activities to increase the operating efficiency of waste recovery and treatment systems employed by industry.

(9) To perform such other technical tasks relating to industrial wastes needed to stimulate improvement in the quality of the nation's water resources.

Within these broad functions, the committee will serve as a coordinating and advisory agency to the Surgeon General on technical phases of the industrial waste disposal program.

—Occurrence, Determination and Removal." The authors, A. E. Sands, H. W. Wainwright and G. C. Egleson presented data showing the amounts of organic sulfur compounds produced from gasification of various coals. They also reported on laboratories work on processes for the removal of organic sulfur.

Louis Shnidman and Jesse S. Yeaw, Rochester Gas & Electric Corp., Rochester, N. Y., indicated that the Rochester Test Burner, after sufficient experience, can be used to predict interchangeability.

"Five critical combustion characteristics can be measured and evaluated by means of the Rochester Test Burner," they said, "four of them by direct test burner readings and the fifth by the proper interpretation of those readings. These include: yellow tip, flame length, flashback, lifting or blowoff, and incomplete combustion on appliance burners."

Burner readings indicate, the authors pointed out, "not only whether or not a test gas is within certain interchangeable limits, but also how near or far from the limits the test gas may be. They also reveal what particular flame characteristics are critical and thus help to show how the test gas should be modified to bring it within the required limits."

The authors stated that the Rochester Test Burner suitably equipped can be used also on natural gas mixtures.

Gas leak detection practices, indicators and other devices were discussed in the next paper. Frank P. Mueller, The Peoples Gas Light & Coke Co., Chicago, Ill. advised against relying on any one instrument to locate and identify flammable gases. Those instruments which are used must be responsive, he added, to the particular gas which is expected and at the same time indicate the presence or absence of all flammable gases in general.

"The gas leak component of unaccounted for gas must always be regarded," he declared, "as something more than a factor affecting the economics of operation. It must be considered as a reflection of the safety of a company's entire distribution system—a measure of the quality of the operating practices and policies of the organization."

The Tuesday morning Gas Production Committee session, with Chairman J. P. Stevens, The Cincinnati Gas & Electric Co., presiding, opened on the controversial subject of "What Good is a Gas Analysis?" H. E. Ferguson, The Peoples Gas Light & Coke Co., Chicago, Ill., was the speaker.

Mr. Ferguson said that the chemical analysis of any product is of value only when it is used to determine the quality of the product or to improve its production and utilization. The chemical itemization provided by an ordinary gas analysis to be of practical value must be converted to a "proximate" analysis—i.e. an analysis indicating the proportions and natures of the component parts of the gas rather than its individual constituents.

"No gas analysis nor any interpretation of a gas analysis is going to solve operating problems or improve gas quality," he declared. "All that the interpretation of a gas analysis can be expected to do is *(Continued on page 49)*

New York-New Jersey meeting to underscore need for aggressive approach

Conference to spotlight sales

Council officers for A. G. A. New York-New Jersey Regional Gas Sales Conference in Spring Lake, N. J., June 19 and 20: George Kelley (left), Westchester Lighting Co., chairman; W. D. Williams, Public Service Electric & Gas Co., vice-chairman ▲

The urgent need for aggressive selling will be the main theme of the New York-New Jersey Regional Gas Sales Conference at the Essex and Sussex Hotel in Spring Lake, N. J., June 19 and 20, 1950. Sponsored by the Residential Gas Section of American Gas Association, the conference is expected to attract more than 200 sales executives of gas utility and gas appliance manufacturing companies.

Delegates will be welcomed by George Kelley, Westchester Lighting Co., Mt. Vernon, N. Y., chairman of the council, who will preside at the Monday meeting. His key speaker will be D. A. Hulcy, president, Lone Star Gas Co., Dallas, and vice-president, A. G. A. Mr. Hulcy has selected "Accent on Action" as the title for his talk. His comments will be devoted to the need for selling, pointing out some of the things the industry must do to meet its competition.

Foremost among the newer appliances that are helping build gas loads is the automatic gas laundry dryer. Edith Ramsay, equipment editor, *American Home* Magazine, will bring the feminine viewpoint on gas laundry dryers to the sales executives. Skilled in merchandising of appliances, Miss Ramsay is well qualified to explain what can be done to increase dryer sales.

Many gas utility companies have adopted a "Show 'Em and Sell 'Em" policy for laundry dryer sales. Two representatives from the home service department, The Brooklyn Union Gas Co., will demonstrate how home service can help sell this efficient new load builder.

Increased supplies of natural gas, improved gas-making processes and expanding transmission and distribution capacities have brought gas house heating to the forefront again. Charles C. Owen, Surface Combustion Corp., Toledo, Ohio, will advise the conferees to "Take Off Rose-Colored Glasses," get acquainted with the transition in this market, and prepare to get out and sell house heating.

Servel, Inc., Evansville, Ind., has announced its intention to sell 50 percent more gas refrigeration in 1950. Achievement of this goal will require some concentrated selling effort on the part of gas utilities and dealers. B. H. Wittman, manager, domestic gas sales department, The Peoples Gas Light & Coke Co., Chicago, headed a sales drive that won first place in a national gas refrigeration contest for his company last year. Mr. Wittman will tell the council some of the sales techniques that won the 1949 Servel award.

A special showing of the *McCall's* Magazine—A. G. A. moving picture, "New Freedom in Her Modern Gas Kitchen," will be offered by Norval Jennings, A. G. A., on Monday evening.

W. D. Williams, Public Service Electric & Gas Co., Newark, N. J., vice-chairman of the regional council, will preside at the Tuesday meetings. His program will open with a talk, "Natural Gas—You and the Consumer," by Irving K. Peck, vice-president, The Manufacturers Light & Heat Company, Pittsburgh, Pennsylvania. Coming from the industrial heart of the country and from one of the largest existing markets for natural gas, Mr. Peck is ably qualified to discuss the sales, promotion and public relations aspects involved in selling natural gas.

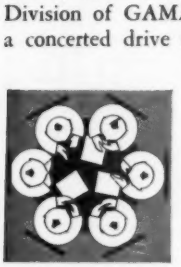
New homes and multiple dwellings constitute a tremendous market for gas services today. Otto J. Hartwig, secretary, New York-New Jersey Builders Council, will express his views of present methods used by gas utilities to sell

this market. He is expected to recommend some additional measures for making these new units all-gas dwellings.

Competition has been making strenuous efforts to capture the water heating market. A. G. A. and the Water Heating Division of GAMA have been staging a concerted drive to protect this valuable load. Ralph L. Towne, sales promotion manager, Rheem Manufacturing Co., will report on the great success of the "All Aboard" campaign to increase sales of automatic gas water heaters.

During the years of a seller's market, too many companies lost sight of the consumer's viewpoint. Carl V. Haecker, Radio Corp. of America, will tell his audience, in an interesting and humorous manner, "Why People Buy."

As in previous years, the New York-New Jersey Regional Gas Sales Conference will end with an informal dinner at which the golf tournament prizes will be distributed.



Industrial relations round-table

Prepared by
A. G. A. Personnel Committee

● **CIO Utility Workers Union** of America, during its convention in New York City on April 30, passed a resolution which has significance not confined to the electric industry. The following is a statement of policy with respect to public power:

"Where power is generated in conjunction with worthwhile water projects, the transmission, distribution and sale of such energy should, under proper regulation, be allocated to the private utility companies.

"Where investor owned companies fail to provide for the distribution and sale of electrical energy then, and then only, should the government undertake such duties.

"Approximately one-fifth of the power generated in America today is distributed and sold by government agencies. We believe that further encroachment of government into the utility industry should be discouraged except in cases of national emergency.

"It is our firm belief that the best interests of all of the people of this nation can best be served and secured through collective bargaining in investor owned public utility corporations.

"We shall continue to advocate that the water resources of the nation be developed. However, we shall object to any move that will result in these worthy projects being used as a means of destroying tax-paying utility companies who, under proper regulation, are furnishing adequate service.

"We further recommend as a matter of policy that the national officers, the local officers and members use every means available to prevent further nationalization of the utility industry, and

"We further recommend as a matter of policy that we insist on fair and proper regulation of the utility industry and that every effort be made to compel utility managements to fulfill their obligations to the consumers and to their employees."

Accompanying the statement of policy is a dissertation on the reasons which impelled the CIO Utility Workers of America to make the recommendation on this highly controversial subject.

Copies of this four-page release may be obtained from the office of David R. Edwards, vice-president, Columbia Engineering Corp., 120 East 41st St., New York 17, New York.

● **"Control by the federal government** of industrial safety programs would be established by passage of S.1439 ("Industrial Safety Act") through 'grants-in-aid' to states complying with regulations of the Secretary of Labor. References to industry's considerable contribution to the elimination of job hazards are conveniently omitted, but it is worth pointing out that according to the Labor Department's own preliminary estimates, injury rates in manufacturing dropped 19 percent during 1949. The bill has been reported favorably, without hearings, by the Senate Labor Committee and awaits action by the Senate. Two similar bills (H.R. 3283 and H.R. 4997) are pending in the House."

The reference to the reduction of work injuries in manufacturing in 1949 may be found in the U. S. Department of Labor's "Labor Information Bulletin" for March 1950.

The editors of "Industrial Relations Round-Table" feel that intrusion of the federal government into the jurisdictions of the states has gone far enough. The "Industrial Safety Act" is one more piece of the same pattern.

● **New personnel society launched**—A new national personnel group, American Society for Personnel Administration, has recently been organized by a group of personnel executives. Aims of ASPA are to (1) raise the standards of personnel practice, (2) establish a clearing house for the exchange of personnel methods and ideas, and (3) have a "say" in federal and state legislative matters that affect personnel work.

Membership in ASPA is open to persons actively engaged in personnel administration. Others who have a bona fide interest in personnel administration are also eligible to join but may not hold office.

The Society will hold its annual meeting June 8-9 in the Detroit-Leland Hotel in Detroit. All persons actively engaged or interested in personnel work are invited to attend. For further details, write any of the following officers of ASPA: Walter Mason (president), personnel director, E. F. Hauserman Co., Cleveland, Ohio; Leonard J. Smith (vice-president), assistant to the president, Lightolier, Inc., Jersey City, N. J.; Mary Hopkins (secretary), personnel director, Ajax Iron Works, Corry, Pa.; Harry Willett (treasurer), personnel director, Cleveland Cap Screw Co., Cleveland.

● **Rating employee and supervisory performance**—"A Manual of Merit-Rating Techniques" has been published by American Management Association, 330 West 42 St., New York 18, N. Y.; $3.25 to members AMA; $3.75 to non-members.

This volume brings together some of the best merit rating principles and techniques by a group of the nation's top authorities in the field. Its purpose is to bring to executives, supervisors, and personnel technicians certain principles and techniques, evolved through wide experience and intensive study, which are designed to produce more objective judgments and thus improve performance ratings. The manual is designed to help the reader evaluate an existing program or to set up one from scratch. A significant feature of the book is that it offers practical guides for writing more facts and fewer impressions into ratings, no matter what system a company happens to be using.

There are 16 chapters, totaling 192 pages, with more than 50 illustrations.

● **New York School of Industrial and Labor Relations** at Cornell University has recently completed a study of the integration of negroes into the work force. The experiences of 33 New York State firms were analyzed by Jacob Seidenberg who conducted the study. His key finding was that an employer about to hire negroes for the first time or place them in new positions should adopt a firm attitude toward adhering to his new policy. Segregated facilities and preferential treatment were carefully avoided by the employers surveyed. The study, "Negroes in the Work Group," may be purchased for 15 cents a copy from Distribution Center, New York State School of Industrial and Labor Relations, Ithaca, New York.

● **Fight for Freedom**—All-time "best seller" among National Association of Manufacturers literature is "Fight for Freedom!" the organization's first "comic-style" booklet. In less than six months, circulation for this dramatic, 16-page full-color

booklet has climbed past the 1,700,000 mark, with orders continuing at a rate of more than 100,000 a month.

An investigation of this field showed "Fight for Freedom!" which was written and produced by the literature department working with General Comics, Inc., has surpassed by far any similar attitude-building booklet in the country. Depicting the march of freedom from the earliest times, the booklet has brought dozens of glowing comments from educators, industrial managers, employee relations specialists and public relations men throughout the country. The only "comic book" award winner from Freedoms Foundation, it became the "best seller" in both the employee and the student markets within the first few months of its publication.

Among the outstanding orders for the booklet were 187,500 from Esso; 150,000 from General Motors; 40,000 from Illinois Central and 30,000 from Caterpiller Tractor Company.

While "Fight for Freedom!" carried away top honors in the record-breaking literature circulation figures of 1949 and early 1950, a number of other literature department booklets and pamphlets ranked high. These included "Your Future Is What You Make It," a vocational guidance booklet whose circulation now exceeds one million; "Pioneers of Progress," a 40-page dramatically illustrated portrayal of world socio-economic history; "Sum and Substance," a condensation of speeches, articles, anecdotes and quotations by industrial and political leaders, and the new "Economics in Action" series, which covers current economics with fast-moving interpretation of today's facts and figures.

● **"How to Pick Leaders"** by G. L. Freeman and E. K. Taylor, 222 pages. Funk & Wagnalls Co., New York. $3.50.

The book is replete with stimulating suggestions and with new approaches to the problem of recruitment and advancement of executive personnel. For example, in a chapter headed "The True Measure of Leadership," the authors suggest that the worth of a junior executive is not to be judged on how well the big boss likes him, or even on what people outside the organization think of him. The true test is whether the unit he supervises is turning out the work with maximum satisfaction and minimum friction to all concerned. The authors go on to suggest how those who are led may be induced to provide the true measure of their leader's leadership.

This is a "working" book, lucid and well-written—a valuable acquisition to the working equipment of top management.

● **Steadier job techniques**—An action program to fight short-term unemployment was released recently by U. S. Chamber of Commerce, Washington 6, D. C.

Directed to management, the Chamber report entitled "Steadier Jobs," (25 cents per copy) proposes a seven-point procedure geared to produce more stabilized employment. Dean H. Mitchell, Social Security Committee chairman and a member of A. G. A. Executive Board, points out that "steadier jobs lead to improved industrial relations, feelings of job security and reduced operating costs."

The report emphasizes that states provide substantial payroll tax savings to those companies which reduce their unemployment, and offers a chart showing potential savings under each state unemployment insurance law.

"Steady jobs mean lower unemployment compensation costs," the report says. "The employer is charged with the unemployment attributable to his own operations under the experience-rating provisions of the state unemployment compensation law. Steady operations can save as high as $30 to $40 per $1,000 of payroll in some states. Layoff of a single employee may cost from $600 to $900 in unemployment compensation."

The report recommends appointment of a top-level "Steadier Jobs Committee" in each company to study and act on sales, production and personnel policies. Recommendations are offered for each major field of company operation.

● **"Industrial Management Symposium,"** The Consolidated Reporting Company, 303 Fourth Avenue, New York, N. Y., $3.75 for 1950 edition.

This symposium consists of 20 well-chosen subjects written by outstanding leaders in various industries throughout the country. It has definite merit in that one is easily able to sense the trend of thinking in high circles these days and thus weigh the merits of one's own concepts. In addition to this, the subject matter is replete with usable information and thought provoking data.

Here are some of the subjects and their authors: "Labor-Management Relations Today," Herman W. Steinkraus, president, Bridgeport Brass Co.; "Today's Job in Labor Relations," H. W. Anderson, vice-president in charge of personnel, General Motors Corp.; "Practical Aspects of Inaugurating a Pension Program," Lee Laird, Standard Oil Co. of California; "Personnel, Safety and Public Relations," W. E. Jones, personnel manager, Climax Molybdenum Co.; "Objective and Results of Aptitude Testing," Charles W. Books, personnel officer, The Pennsylvania Co. for Banking and Trusts; "Helping People Want to Develop," Federal Security Agency; "The High Cost of Economic Ignorance," L. E. Purvis, Opinion Research Corp.;* "Management's Responsibilities for Personnel Policies," Alexander R. Heron, vice-president, Crown Zellerbach Corp.; "Management's Job in an Age of Security," C. B. Boulet, Wisconsin Public Service Corp.,† a member of A. G. A. Personnel Committee, and others.

* A. G. A. MONTHLY, p. 20, October 1949.
† A. G. A. MONTHLY, p. 12, May 1949.

Gas lines

(*Continued from page 11*)

and get the business. And we have had to do it as a manufactured gas utility with relatively high gas rates.

If you set aside about two cents of every dollar you take in from the sale of gas, you can pay for a sales force and local promotion that can do an effective job for you. We not only hope to hold present load, but we all want to build new load and increase revenues. Last year, Brooklyn Union, through its appliance sales and other promotion programs, added $1,400,000 in estimated new annual revenue. For each dollar of new revenue, we spent 55 cents in promotion costs. I believe we can afford to spend even more than that to insure the future of our business.

To get back to our national responsibilities, we cannot measure all of our problems in terms of physical productivity. Corporations are not merely aggregations of materials and machines. More important, they are people. A particular gas field may become exhausted, a plant may be destroyed or lost by accident or war, but as long as a company has people—loyal, experienced, and working together as an effective team—new gas fields can be found and new plants can be built.

We must make the utility business attractive to intelligent young men and women and see to it that they receive able leadership and inspiration. The success of an industry comes down in the final analysis to the leadership and planning that goes into it.

We must find ways, too, to give the individual worker, at every rank, a sense of accomplishment, a feeling of personal worth, a realization of the true importance of his effort to the broad policies of the business. We have seen in this country that the individual—when not hedged in and hampered, but given the opportunity to learn and grow, represents a tremendous creative force. Let's harness that force by sound and creative personnel policies.

There are many other responsibilities that our industry, as a vital and essential force in the community and nation, must accept. I have every confidence that we will meet all of them squarely and completely. We have at hand all of the attributes of a dynamic, enduring and expanding industry. Let us translate these great opportunities of today into the concrete achievements of tomorrow.

Industry news

A.G.A. convention plans assume definite shape

MAJOR PROGRESS already has been made in plans for the 1950 American Gas Association Convention in Atlantic City, N. J., October 2-6. Organization of the mammoth meeting is under the supervision of the General Convention Committee, George E. Whitwell, vice-president, Philadelphia Electric Co., chairman.

Three general sessions will be held in the ballroom of the Atlantic City Auditorium on Monday afternoon, October 2; Tuesday morning, October 3 and Thursday morning, October 5. Program details for these sessions will be announced in the July-August issue of the A. G. A. MONTHLY. Nationally known authorities will address the meetings on such subjects as the general business situation, the present and future of social security, human relations, financing, selling, balanced loads, meeting competition, and other timely subjects.

The convention will open on Monday morning, October 2, with a joint meeting of the A. G. A. Manufactured Gas and Natural Gas Departments. Principal feature will be a panel discussion by well-informed gas industry executives on the subject of changeover to natural gas, a topic of primary concern to many companies because of the phenomenal extension of the nation's pipeline systems.

On Tuesday afternoon there will be luncheon meetings of the Industrial and Commercial Gas Section and the Accounting Section, as well as meetings of the Operating and Residential Gas Sections.

No meetings will be held on Wednesday afternoon, October 4, in order to allow delegates ample time to see and study the giant exposition of gas appliances and equipment in the Atlantic City auditorium. Wednesday morning, however, will be a busy one for meetings. The annual Home Service Breakfast will begin the day's schedule, followed by a joint meeting of the Residential Gas Section and the Industrial and Commercial Gas Section. Other Wednesday morning events will be meetings on Customer Activities and General Activities arranged by the Accounting Section; a home service round-table; possibly a meeting of the Operating Section; and a separate session on employee relations, sponsored by A. G. A. Personnel Committee.

A mammoth dealers' meeting will be held in the Ballroom of the Atlantic City Auditorium on Thursday afternoon, October 5. Joint sponsorship will be by American Gas Association, Gas Appliance Manufacturers Association, and National Appliance and Radio Dealers Association. Plans are being developed to assure a large attendance of dealers so that they also will have the opportunity to see the huge exposition of the latest gas appliances and equipment.

Harold Massey, manager of the Gas Appliance Manufacturers Exposition, reports that every available booth has been sold for the exhibit. Since applications for exhibition space continue to arrive at the GAMA office, an attempt will be made to open up additional exhibition areas to supplement the 70,000 square feet of space that already has been reserved by manufacturers.

Many of the manufacturers who have exhibited in previous years have increased their exhibition space this year. In addition, approximately 25 new exhibitors have reserved space. A review of the plans of over 165 exhibitors indicates more impressive displays than ever before.

Thursday and Friday will be designated as "Dealers' Day" and a record attendance of gas appliance dealers and LP-gas dealers is expected.

An interesting program of entertainment for delegates and their wives is being planned to extend from Monday through Thursday. At the popular President's Reception, President Hugh H. Cuthrell and the officers of A. G. A. and GAMA will greet the delegates at the beginning of the social activities. Under the direction of the Convention Entertainment Committee, of which Otis H. Ritenour, Washington Gas Light Co., Washington, D. C., is chairman, there will be top flight stage shows, dancing, music and other features for relaxation after the day's work is done.

The Tuesday Afternoon Ladies' Party will be held at a prominent Boardwalk hotel in one of the most attractive rooms in Atlantic City. Hostesses for this afternoon party, to which the wives of gas industry members look forward with such interest, will be Ann Cuthrell and her Ladies' Committee.

Atlantic City hotels report that advance reservations indicate a record-breaking attendance at the 1950 American Gas Association Convention. Members are urged, therefore, to secure their hotel accommodations as soon as possible. Requests for reservations should be made on a form, available at A. G. A. Headquarters, to be mailed direct to American Gas Association Housing Bureau, 16 Central Pier, Atlantic City, N. J.

Our future rests in our own hands

● Excerpts from paper by Lyle C. Harvey, president and general manager, Affiliated Gas Equipment, Inc., Cleveland, at annual meeting of Indiana Gas Association in French Lick, Ind., April 27 and 28, 1950.

THE APPLIANCES that the dealers sell are definitely a responsibility of the utility company! Since they will prove to be your responsibility *after* they are sold, you had better make them your responsibility *before* they are sold! These appliances will in the long run determine the service you provide for your customers.

The utility, of its own free will and by its own actions, has passed out of the picture as an important customer of the range manufacturer. How this affects your business remains to be seen, but certainly the answer depends on the influence you exert in the gas appliance merchandising picture. And, the utility merchandising influence has been going down —not up—on water heaters, ranges and house heating.

So far as house heating is concerned, the utility can handle the release of natural gas as a means of building up the proper kind of dealer merchandising for this particular type of appliance—a means of building up the proper merchandising influence, whether it actually sells or not.

The gas company can use the release of natural gas for house heating, whether it be the complete removal of restrictions or merely a limited removal of restrictions, to get the proper kind of dealer merchandising program started. The utility can see to it that the dealers put in the kind of equipment the utility wants on its lines, properly installed, and that proper servicing arrangements are provided. On the other hand, the utility can use this opportunity to reach a point where the public is dissatisfied with gas as a fuel and the dealers no longer feel there is any profit in the gas appliance business.

So you have an interest in what the dealer sells and just as surely you have an interest in how he sells, how he installs and how he services. If you want the dealer to handle your sales business, it's high time you make sure he has a business—an effective and profitable business—on the kind of appliances you want to have representing you in the homes of your customers. In order to do this, you have to do a lot of things and so has the dealer.

It is very important to remember that the initiative for a successful utility-dealer program must start with the utility. If you are sincerely interested in dealer cooperation in your territory, I earnestly recommend immediate action as follows:

(1) Make a complete dealer survey in each of your towns. List all of the legitimate heating dealers. Find out how they operate, the capacity of their shops, their merchandising plans, number of outside salesmen, display facilities and their knowledge of good heating practice. Find out what they do to locate prospects and, once a prospect is located, how effectively the selling is applied.

(2) Upon completion of this survey, call a meeting of the dealers in each area. Make this a round-table discussion affair. Tell the dealers how and when you hope to make more gas available and how you want to capitalize on the demand for gas heating in building up your base loads. Demonstrate the manner in which this can mean more business and greater profit to the dealer.

(3) Find out the most effective way to help your dealers. Offer salesmen's training schools, service and installation programs, financing plans, cooperative advertising and direct-mail help. Get the dealers on your team. If you help them, they surely will help you.

Home service winners named in CP contest

SOME 29 home service representatives throughout the country have been awarded a total of $500 in prizes for the best demonstrations of automatic gas ranges built to CP standards.

Sponsored by the Association's Home Service Committee, this first postwar contest of its kind was designed to promote interest in and increase the demonstration possibilities for automatic gas ranges. The competition was open to all home service representatives of gas companies in this country and Canada. Prizes were contributed by the CP manufacturers group, Gas Appliance Manufacturers Association. Later in the year, GAMA will make the winning demonstrations available to the industry in printed form.

Meeting at A. G. A. headquarters in New York on May 5, the jury of awards gave the first prize of $100 to Isabel McGovern, home service director, Minneapolis Gas Company. Second prize of $75 was awarded to Margaret Bauer, home service representative, Rochester Gas & Electric Corp., Rochester, New York. Third prize of $50 went to Lois Payne, home service director, Westchester Lighting Co., Mt. Vernon, N. Y., and fourth prize of $25, to Lucille E. Boettcher, home economist, Laclede Gas Co., St. Louis, Missouri.

Twenty-five prizes of ten dollars each were awarded as follows: Mrs. Elyse Van Dyke, Alabama Gas Corp.; Margaret McPherson, Boston Consolidated Gas Co.; Jean E. Mutch, British Columbia Electric Co., Vancouver, B. C.; Catherine Haigler and Sarah O'Connor, The Brooklyn Union Gas Co.; Janet Duzan, The Dayton Power & Light Co., Dayton, Ohio; Mrs. Gussie Lee Fuller, Lone Star Gas Co., Dallas.

Also the following winners: Ruth Smith Carlson, Mrs. Barbara Graham and Ethelene Willems, Michigan Consolidated Gas Co.; Carolyn Davis, Nashville Gas & Heating Co.; Kathryn G. Ashcroft, The Ohio Fuel Gas Co.; Mrs. Maxine Gentis, Pacific Gas & Electric Co., San Francisco; Helen E. Bell, Mary Ann Kennedy, and Nancy Vickroy, The Peoples Natural Gas Co., Pittsburgh; Ann Stoner, Public Service Electric & Gas Co., Newark, N. J.; Helen K. Crawford, Cynthia Heister, and Anne Lyng, Rochester Gas & Electric Corp.; Florence M. Carmi, Ida Lansden, Louise Maus and Sara Williams, Washington Gas Light Co., Washington, D. C.; Loreen Jacobson, Wisconsin Power & Light Company.

Requirements of the contest called for demonstrations of 20-30 minutes duration. Each demonstration was to be suitable for presentation by one person only and must have been given before at least one group of customers, salesmen or dealers. The demonstrations were to be sales-slanted and dramatically effective.

Jury of Awards judging entries in "CP" range demonstration contest sponsored by A. G. A. Home Service Committee: (Clockwise around table) H. P. Morehouse, chairman, A. G. A. Residential Gas Section; Marie M. Daugherty, Chicago; Mrs. Ruth P. Casa-Emellos, New York; Irene L. Muntz, chairman, Home Service Committee; Dr. Helen Judy Bond, New York; Eleanor Morrison, past-chairman, Home Service Committee; Harold E. Jalass, chairman, GAMA "CP" Manufacturers Group

Talent

● If a man has a talent and cannot use it, he has failed. If he has a talent and uses only half of it, he has partly failed. If he has a talent and learns somehow to use the whole of it, he has gloriously succeeded, and won a satisfaction and a triumph few men ever know —*Thomas Wolfe.*

Hartford home builder display successful

Hartford Gas Company display at Home Builders Show in West Hartford, Connecticut. The company exhibited its entire line of gas appliances, and in addition to satisfactory sales at the show, obtained a large number of good prospects. More than 30,000 persons visited the show

Canadian company popularizes style show

This Spring Style Show exhibit sponsored by Union Gas Co. of Canada Ltd. at Jay Cee Fair in Windsor, Ontario, attracted unusual amount of favorable comment and also many useful inquiries

Domestic gas range shipments continue upswing

TOTAL industry shipments of domestic gas ranges during the first four months of 1950 increased 68.8 percent over a year ago, according to Gas Appliance Manufacturers Association. The new total of 888,000 units compares with 526,000 units shipped during the first four months of 1949, and is practically double the prewar average (1936-40) of 448,700 units shipped for the period.

During 1948, the alltime peak year, 948,600 domestic gas ranges were shipped during the first four months.

For the second consecutive month, indications are that industry shipments of domestic gas ranges surpassed the previous "high" for a particular month. April 1950 shipments are estimated at 246,000 units, 63.9 percent over shipments of April 1949, and slightly greater than the 245,300 units shipped during April 1948, the previous high for the month. The prewar average (1936-40) for the month was 144,400 units.

While figures relating to shipments of electric ranges during the first four months of 1950 are not available, first quarter shipments were estimated at 413,900 units, 23.4 percent greater than the 335,500 units shipped during the first quarter of 1949. Comparable figures on domestic gas ranges show that during the first quarter of 1950, some 642,000 units were shipped as compared with 375,900 units in 1949, an increase of 70.8 percent.

The 166,000 electric ranges shipped during March 1950 appears to have established a new peak. Domestic gas range shipments during that month were estimated at 268,000 units.

Gas water heaters gain during first quarter

SHIPMENTS of automatic gas water heaters totaled 639,800 units during the first four months of 1950, according to preliminary reports released by Gas Appliance Manufacturers Association.

This is an increase of 62.3 percent over the same period of 1949, and approximates the activity of the first four months of the alltime peak year—1947, when 664,700 units were shipped. Unit shipments during the first four months of this year were more than four and one half times greater than the prewar average (1936-40) for the period.

April 1950 shipments estimated at 176,700 units were 53.4 percent greater than during the same month of 1949. For the second consecutive month, a new alltime monthly peak was established.

While figures relating to shipments of electric storage water heaters during the first four months of 1950 are not available, first quarter shipments are estimated at 209,200 units, an increase of 36.3 percent over the 153,500 electric storage water heaters shipped during the first quarter of 1949. Comparable figures on automatic gas water heaters indicate that during the first quarter of this year, shipments totaled 463,100 units, or 66.0 percent greater than the 278,900 units shipped during the first quarter of 1949.

DOMESTIC RANGE SHIPMENTS—UNITS*

	GAS			ELECTRIC		
	1950	1949	% Change	1950	1949	% Change
January	165,000	106,700	+54.6	111,900	128,400	−12.9
February	209,000	117,700	+77.6	136,000	103,200	+31.8
March	268,000†	151,500	+76.9	166,000	103,900	+59.8
1st quarter	642,000	375,900	**+70.8**	413,900	335,500	**+23.4**
April	246,000†	150,100	+63.9	‡	71,000	—
Four months	888,000	526,000	**+68.8**	‡	406,500	—
May		151,600			61,800	
June		162,200			80,800	
July		125,800			73,900	
August		206,100			78,000	
September		227,300			108,700	
October		257,500			85,600	
November		237,400			70,700	
December		175,700			90,000	
Total		2,069,600			1,056,000	

* Sources: GAMA, NEMA, Bureau of the Census
† Preliminary—subject to revision
‡ Not available

WATER HEATER SHIPMENTS—UNITS*

	GAS—AUTOMATIC			ELECTRIC—STORAGE		
	1950	1949	% Change	1950	1949	% Change
January	131,600	88,400	+48.9	57,100	43,600	+31.0
February	156,500	84,500	+85.2	68,600	54,300	+26.3
March	175,000†	106,000	+65.1	83,500	55,600	+50.2
1st quarter	463,100	278,900	**+66.0**	209,200	153,500	**+36.3**
April	176,700†	115,200	+53.4	‡	52,100	—
Four months	639,800	394,100	**+62.3**	‡	205,600	—
May		120,200			59,600	
June		132,200			67,000	
July		114,400			54,400	
August		138,800			62,300	
September		147,300			68,800	
October		154,200			68,700	
November		138,300			53,500	
December		126,500			55,100	
Total		1,466,000			695,000	

* Sources: GAMA, NEMA, Bureau of the Census
† Preliminary—subject to revision
‡ Not available

French gas contract

A CONTRACT for supplying all the equipment needed for conversion of 29 manufactured gas plants in France to propane has been obtained by North American Petroleum Gas Corp., New York, N. Y.

Most of the French gas industry has been nationalized and operates under a government agency known as Gaz de France. According to Virgil Stark, president of the New York firm, the majority of the French gas plants are small.

Plants with a production of less than 20 million cubic feet a year represent 58 percent of the total number, but have a combined gas production which is approximately only 3.5 percent of the total gas production.

Most of the French gas plants are of the coal retort type, and production costs per unit of gas are 2-3 times those of the larger, more modern plants, Mr. Stark noted. Gas rates have not been raised proportionately with increased production costs, and consequently most of these smaller plants operate at a loss.

Times change

● Pre-War: The Customer is always right. Wartime: The Customer was often left.

Post-War: Unless you treat customers right you won't have any customers left.—*Selected.*

Hewson elected president of PUAA

William B. Hewson (center), The Brooklyn Union Gas Co., newly-elected president of Public Utilities Advertising Association, poses with his 1950-1951 team. Left to right are: third vice-president—Walter G. Heren, St. Louis; second vice-president—Paul L. Penfield, Detroit; President Hewson; first vice-president—John E. Canfield, Madison; treasurer—Mead Schenck, Dubuque. George Hanel is secretary

THE GROWING STATURE of advertising as a sales and public relations tool was reflected at the twenty-ninth annual convention of Public Utilities Advertising Association in Kansas City, Mo., May 11-12. A record gathering of more than 200 advertising executives took part in the conference which explored many phases of newspaper, magazine, billboard, radio, display and television advertising. High spot was the award of prizes in the annual Better Copy Contest to utilities in 20 different classifications.

William B. Hewson, assistant vice-president, The Brooklyn Union Gas Co., was elected president of PUAA for the 1950-1951 term. Mr. Hewson is a member of National Advertising and Domestic Gas Copy Committees of A.G.A. and has been an active participant in many Association programs. Other new PUAA officers are: first vice-president—John E. Canfield, Wisconsin Power and Light Co.; second vice-president—Paul L. Penfield, The Detroit Edison Co.; and third vice-president—Walter G. Heren, Union Electric Co. of Missouri, and secretary—George Hanel, The Connecticut Light and Power Company. Mead Schenck, Interstate Power Co., was reelected treasurer.

Floyd I. Fairman, Kentucky Utilities Co., retiring PUAA president, reported the addition of 35 new members during the year, making a total of 338 members.

Advertising expenditures per utility customer have increased sharply, President-elect Hewson reported, in presenting the results of a survey of 147 companies, of which 53 were gas, 47 electric, and the remainder combination. In 1940 the average expenditure per customer was 49 cents; by 1947 it was 52 cents, and in 1949 it had mounted to 65 cents.

While electric companies spent more money than gas companies per customer for advertising, gas utilities showed a higher expenditure as compared with percentage of revenue. Newspaper space continued to claim the lion's share of the advertising dollar, accounting for 35 percent, Mr. Hewson reported.

C. Fred Westin, Public Service Electric & Gas Co., Newark, N. J., presented results of a survey of 150 companies indicating that the average advertising manager is a versatile fellow with his hands in 31 different fields ranging from space advertising to civic activities. The four big activities were shown as space advertising, direct mail, news and advertising publicity, and radio.

A lively "hellbox" session led by Mr. Hewson evoked considerable information on area advertising, agency results, newspaper publicity, selection of newspaper media, and advertising to combat socialism. Among the discussion leaders were H. A. Praeger, The Brooklyn Union Gas Co.; J. S. Spaulding, Southern California Gas Co., and Charles J. Allen, The Connecticut Light and Power Co.

Finer points analyzed

R. M. Alderman, McCann-Erickson, Inc., New York, gave an informative talk on the re-use of advertising, in which he recommended repetition of outstanding advertisements as an effective way to save money.

An analysis of the finer points of good display advertising was made by Delbert S. Ford, Consumers Power Co., Jackson, Mich., who said displays indicate the company's character to the public. Not only do they sell goods in the display rooms, which he called "customer rooms," but they create or dissipate public good will to a surprising extent.

Other speakers presented talks on public relations, display advertising, characteristics of a good advertising manager, salesmanship, and private versus public enterprise. Colorful cartoon films were shown by John A. Sutherland Productions depicting the horrors of an all-powerful government. The conference was further enlivened by a humorous safety demonstration presented by the Kansas City police department, at the luncheon sponsored by The Gas Service Company and Kansas City Light and Power Company. A dinner, entertainment and door prizes were presented to PUAA members by Crosley.

Winners of the annual Better Copy Contest awards were announced at the concluding session, Friday afternoon, by Walter G. Heren, chairman of the contest committee. Competing companies were divided into three groups: A—less than 125,000 customers; B—125,000 to 300,000 customers; and C—More than 300,000 customers.

Gas companies in competition with other utilities made a creditable showing in outdoor advertising, interior display and films but were notably weak in bill enclosures and direct mail pieces, annual reports, and complete programs. The East Ohio Gas Co., Cleveland, won the top award for all utility companies for the production of an outstanding film.

New Orleans Public Service Inc., and The Cincinnati Gas and Electric Company with three first-place awards each led all other competitors in classifications including gas industry material. The New Orleans utility also scored two second-place winners and Cincinnati had one second-place entry. Other multiple winners included Portland Gas & Coke Company, two firsts and two thirds; Pittsburgh Natural Gas Companies, a first, second and third; The East Ohio Gas Co., one first and two thirds; Central Hudson Gas & Electric Corp., one first and one third; Citizens Gas & Coke Utility, Indianapolis, two seconds and one third; The Manufacturers Light & Heat Co., a second and a third; Consolidated Edison Co. of New York, Inc., first and second; Atlanta Gas Light Co., first and second; and Public Service Electric & Gas Co., second and third.

Winners of first-place awards in various classifications which included gas industry entries were as follows:

Series of public relations advertisements—Portland Gas & Coke Co., Portland, Ore., New Orleans Public Service Inc.; Philadelphia Electric Company.

Series of Gas promotional advertisements—Illinois Northern Utilities Co., Dixon; Equitable Gas Co., Pittsburgh; The Cincinnati Gas and Electric Company.

Single advertisement on any subject—Central Hudson Gas & Electric Corp.; Atlanta Gas Light Co.; Pittsburgh Natural Gas Companies.

Employee newspapers (all utility companies)—Mississippi Power & Light Company.

Bill enclosures, direct mail pieces, commercial or industrial (all utility companies)—New Orleans Public Service Inc.; The Cincinnati Gas and Electric Company.

Special employee booklets (all utility companies)—Consolidated Edison Co. of New York, Inc.

Interior display (all utility companies)—Kings County Lighting Co., The Cincinnati Gas and Electric Company.

Outdoor advertising, large units (all utility companies)—Portland Gas & Coke Co.

Radio advertising (all utility companies)—New Orleans Public Service Inc.

Films (all utility companies)—The East Ohio Gas Company.

Hartford Gas fetes home economists

Speakers and guests at The Hartford Gas Company's annual home economics conference: (Left to right) Ruth Cowles, Carmel Along, Pearl Grandy, Elizabeth Farnham, Edith Cushman, Agnes Gorse, Mrs. Paul Buchanan, Howard Carlson, sales manager; Marie Sellers, Dr. Margaret Chaney, Olga P. Brucher, Paul Buchanan, Jane Tiffany Wagner, Clara Cerveny, Mrs. Arra Sutton Mixter, home service director

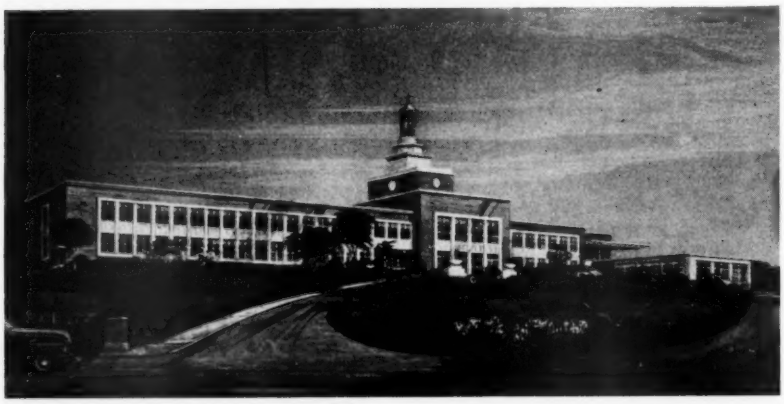
TRENDS in home economics education, foods, radio and television were outlined for 150 home economics teachers from schools in the Hartford, Connecticut area on April 26. The occasion was the sixth annual home economics conference sponsored by The Hartford Gas Company.

Home economics work in the field is an excellent gas for television education work, Jane Tiffany Wagner, director of education for National Broadcasting Co., told the group. Miss Wagner, currently in charge of the University of the Air "Home Is What You Make It," discussed advantages of home economics training for every-day living.

Other featured speakers on the program were Olga P. Brucher, dean, school of home economics at Rhode Island State College, and Marie Sellers, director of consumer service, General Foods Corporation.

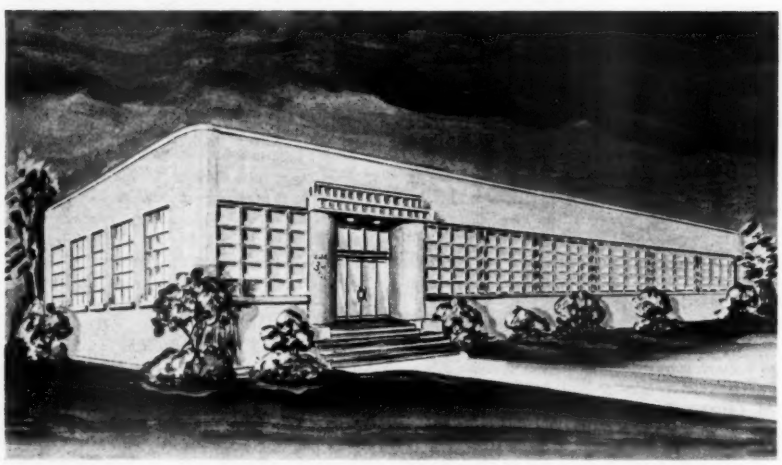
Guests showed particular interest in the company's New Freedom Gas Kitchen display and exhibit of modern gas appliances. Mrs. Arra Sutton Mixter is home service director, The Hartford Gas Company.

Connecticut L&P planning new offices



Imposing new central office building which will be erected by The Connecticut Light & Power Company in the town of Berlin, Connecticut. The structure will house approximately 300 persons

Sprague Meter opens new facilities



Sprague Meter Co., celebrating its fiftieth anniversary, has erected this modern warehouse in Davenport, Iowa, with the latest storage and repair facilities. A somewhat similar structure has been built in Houston, Texas. Special dedication ceremonies were held in each community

Air conditioning award

AMERICAN GAS ASSOCIATION has announced its annual Progress Award for Gas Summer Air Conditioning. A handsome copper plaque on a polished walnut panel and a check for $1,000 will be used at the discretion of utility management for a joint activity to be enjoyed by the entire personnel of the winning company, or for distribution to those most responsible for the achievement. Each member of the winning utility who had a part in its gas summer air conditioning accomplishment will receive a gold-plated miniature reproduction of the company's trophy plaque.

Any gas utility company member of A. G. A. is eligible for the contest. Accomplishments in application engineering, product improvement, sales planning, organization development, sales promotion or any other outstanding achievement making a worthwhile contribution toward the advancement of gas summer air conditioning will be considered by the jury of awards. Entries must be mailed to L. Bert Nye, Jr., chairman, A. G. A. Gas Summer Air Conditioning Committee, American Gas Association, 420 Lexington Avenue, New York 17, N. Y., on or before August 1, 1950 and should be based on accomplishment in 1949.

The jury of awards will include a representative from each of the following fields of science and industry: American Society of Heating and Ventilating Engineers; the educational field; gas trade publishers; American Institute of Architects; The Building Industry Press; Gas Appliance Manufacturers Association; American Gas Association Laboratories, and a representative of A. G. A. Residential Gas Section.

Previous winners of the A. G. A. Progress Award were Southern California Gas Company for 1947 and the Houston Natural Gas Corporation for 1948.

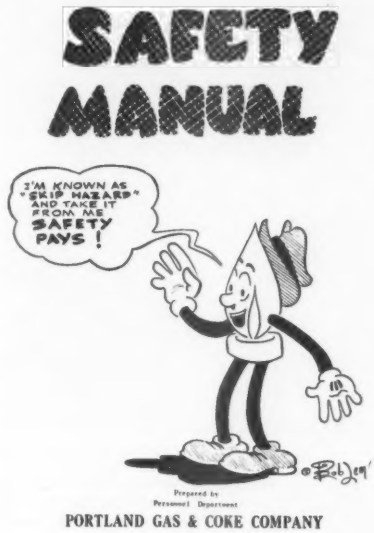
"Skip Hazard" to lead gas safety drive

SKIP HAZARD, a nimble little fellow with an amazing ability to be in the right spot at the right time, may well become a leading figure in the gas industry. Now, for the first time, this animated character has been made available to members of American Gas Association as a special safety promotion feature.

An intriguing symbol of safety, Skip Hazard was originated and copyrighted by Bob Lem, Portland (Ore.) Gas & Coke Co., and used in that company's current safety promotion drive. Skip's appearances have been so successful that he has received the endorsement of the A. G. A. Accident Prevention Committee under its chairman, the late Paul Hasskarl, and his successor, W. H. Adams, The Manufacturers Light and Heat Co., Pittsburgh.

Unlike other safety promotion programs, Skip Hazard was originated for and will be used exclusively in the gas industry. He can put across safety messages in a medium that carries the widest possible reader appeal. The type of Skip Hazard program adopted by the Portland utility is readily understood by all personnel and is easily translated into positive action—*safety!*

This novel safety promotion service will be offered to member gas companies as a "package" program. Cost will be based upon mass distribution and current production rates. Quantity production will assure a reasonable cost to organizations of all sizes.


SAFETY
MANUAL
I'M KNOWN AS "SKIP HAZARD" AND TAKE IT FROM ME SAFETY PAYS !
Prepared by Personnel Department
PORTLAND GAS & COKE COMPANY

Six different types of successfully tested material will be offered to participating companies:

(1) A series of three four-color posters for bulletin board use to introduce Skip Hazard to gas company personnel and stimulate interest.

(2) A series of 12 four-color, follow-up posters on current industry-wide safety hazards.

(3) A four-color comic book for general distribution by mail to all personnel to familiarize them and their families with Skip Hazard as a safety symbol.

(4) A complete safety contest kit containing all items and instructions for an organization-wide safety contest.

(5) Skip Hazard mats or proofs for use in printed or mimeographed house organs.

(6) A series of 24 four-color paycheck stuffers—regular reminders of the need for continuing safety education.

Each year, a new series will be offered, incorporating the newest advances in safety education in the gas industry.

Further details can be obtained from Bob Lem Safety Comics, 4635 North Minnesota St., Portland 11, Oregon. Mr. Lem's gas plant drawings already have received national attention. His "safety engineer's nightmare" appears on page 40, A. G. A. MONTHLY, September 1949. His work has been reproduced also in recent issues of *Safety Engineering* and *Gas Age* magazines.

Executive board honors former director

CONTRIBUTIONS to the gas industry by the late John Van Norden were singled out on May 12, 1950 in a resolution adopted unanimously by the Executive Board of American Gas Association. Mr. Van Norden was a director and member of the Executive Committee of A. G. A. at the time of his death.

Comprising the special resolutions committee appointed by A. G. A. President H. H. Cuthrell, were Frank C. Smith, Houston, chairman; Stanley H. Hobson, Rockford, Ill., and L. B. Bonnett, New York, N. Y. The board expressed its profound sorrow at Mr. Van Norden's death and paid tribute to his active service with A. G. A. and GAMA since 1928.

Copies of the resolution have been sent to Mrs. Van Norden and also to the president of American Meter Company. Mr. Van Norden was secretary and sales promotion manager of the firm.

Philadelphia views new television series

A NEW HOME SERVICE TYPE of video entertainment was introduced recently by The Philadelphia Gas Works Company as a series of "PGW Television Matinee" shows over Station WPTZ.

Billed as "television's newest and most interesting daytime show for the ladies," the program is presented every Thursday at 3:00 P.M., from the basement studios of WPTZ in Philadelphia.

Entertainment is the keynote of the show, which features a master of ceremonies surrounded by well known chefs, maitres d' hotel, prominent guests, musicians and tiny tots. Even the studio audience joins in the fun.

Setting for the show is a modern gas kitchen equipped with a fully-automatic, six-burner gas range and gas refrigerator. Caloric Stove Corp., Philadelphia, participates in the show as a co-sponsor.

Commercial aspects of "Television Matinee," although occurring frequently, are given major emphasis when the gas appliances are demonstrated, and when audio-visual plugs on the advantages of gas are televised.

Pete Boyle, master of ceremonies on Station WPTZ's "Television Matinee," holding guest registration book with home service representative from The Philadelphia Gas Works Co., program sponsor. Visiting celebrities and well known local personalities will be guest-starred on the show

Discussion series opened for A.G.A. employees

IN TODAY'S complex civilization it is more necessary than ever before for each employee to understand the objectives of his industry or business. In order to foster this feeling of "belongingness," American Gas Association has initiated an intensive discussion program operated and run by and for employees at A. G. A. headquarters in New York.

The Association's move is in line with similar steps being undertaken by farsighted managements throughout the country. It is expected to result in the added benefits of helpful information for new A. G. A. employees and basic data which can be used to stimulate similar discussion programs throughout the industry.

First step in the the A. G. A. employee discussion program is a short introductory course offered this spring on a trial basis. Three round-table discussion meetings were started on May 22 and will continue through June 29. Selected as discussion topics are (1) The Gas Industry—Its Origin and Evolution, (2) The General Function of A. G. A. and Other Trade Associations, and (3) A. G. A. Headquarters Organization, Functions and Policies.

Organization and administration of the program is carried out by a nine-man committee of junior and senior staff employees. This committee in turn selects discussion leaders, speakers, recorders, and observers for each meeting. Edgar A. Jahn, assistant utilization engineer, is chairman of the over-all committee.

Fifteen employees who have been selected as discussion leaders were shown how to conduct effective meetings during a series of afternoon get-togethers. Several representatives of the Committee for Economic Development, a pioneer in the employee training field, offered guidance and program suggestions. In addition, Dr. Henrietta Fleck, home economics department at New York University, outlined basic requirements for a productive discussion. Dr. Fleck was a speaker at the A. G. A. Home Service Workshop in Chicago, January 4-6, 1950, and is a recognized authority in the employee training field.

Over-all objectives of the A. G. A. program were outlined at a special dinner meeting which preceded the first discussion session. The committee in charge of the program announced that the spring series will be used as a springboard for further meetings on specific aspects of the American economic system.

Gas measurement course proves popular

A RECORD NUMBER of persons—928 men from industry and 125 college students—enrolled for the twenty-fifth silver anniversary, Southwestern Gas Measurement Short Course at University of Oklahoma, Norman, Okla., April 11-13.

The general opening session was addressed by W. H. Carson, dean of the College of Engineering, and Dr. G. L. Cross, president, University of Oklahoma. Principal address was given by J. H. Russell, vice-president, Gulf Oil Corporation. This session was presided over by W. H. Woods, Gulf Oil Corporation. B. F. Worley, United Gas Corp., outlined the program of classes for the course.

Elimination of general sessions on Wednesday and Thursday mornings made it possible to include a greater variety of topics for classroom discussions than in previous years. Some 80 instructors in charge of classroom work were drawn from the University faculty, industry, and manufacturers of gas measurement, regulation, and related equipment. Thirty exhibitors who participated employed unique means to give educational demonstrations on the functioning of equipment.

The executive committee elected B. F. Worley to serve as chairman of the general committee for the next short course, April 10-12, 1951. Chairman of subcommittees are: W. H. Carson, local arrangements; Kate A. Niblack, publicity and registration; James L. Griffin, program committee; K. R. Tibbets, exhibit committee; T. S. Whitis, publications committee; W. A. Brewster, practical methods committee.

Each year the general committee offers seven prizes for papers on the subject, "What I learned at the Gas Measurement Short Course." Winners for 1949 were as follows:

First prize—E. V. Martin, United Gas Corp., Gulfport, Miss.; Second prize—G. A. Bridges, Phillips Petroleum Co., Bartlesville, Okla.; Third prize—J. P. Berling, Texas Gulf Sulphur Co., New Gulf, Texas; Four fourth prizes—J. W. Ryan, Sinclair Prairie Oil Co., Tulsa; C. A. Hummel, Lone Star Gas Co., Ranger, Texas; C. E. Richards, Jr., Pan American Gas Co., Texas City, Texas, and A. H. Barrett, Stanolind Oil and Gas Co., Levelland, Texas.

Texas Gas maps area development drive

GREATER industrial use of natural gas and the attraction of new industries are goals of a new area development program mapped by Texas Gas Transmission Corp., Owensboro, Kentucky. The program will stress that new levels of progress and prosperity are attainable now that the company has doubled the amount of natural gas available in the Big River Region.

Operation of the area development program will be under the direction of Herman Horstman, new director of sales and customer relations, and John Kirtley, director of public relations. The drive will be coordinated with the work of state and local agencies and civic groups.

To implement the program, RKO Pathe has completed for Texas Gas a 16 mm documentary sales film dramatizing the uses of natural gas. Produced in color, the film will be prepared in two versions—for school, university and local club audiences, as well as for business executives.

New publications of interest to gas industry

● More than 100 handsome photographs of pipeline installations are reproduced in an elaborate new booklet published by Nordstrom Valve Division, Rockwell Manufacturing Company. Also included are factual data on pipeline mileage and multicolored maps showing the principal gas, crude oil and products pipelines. Of special interest are data and illustrations of power operated valves.

Copies of Bulletin V-210 may be obtained from Rockwell Manufacturing Co., 400 North Lexington Ave., Pittsburgh, Pennsylvania.

● **"Internal Auditing in Industry,"** published by The Institute of Internal Auditors, includes among its 20 divisions, an informative chapter on internal auditing in the public utility industry. American Gas Association was represented on the subcommittee which prepared this chapter by H. A. Martinson, Boston Consolidated Gas Company. Mr. Martinson is currently a member, A. G. A. Subcommittee on Internal Auditing.

After initial writings by the subcommittee, the chapter was reviewed, discussed and commented upon by many persons in the utility industry. As a result, it is both descriptive and authoritative.

The new publication is available for sale from The Institute of Internal Auditors, 120 Wall St., New York 5, N. Y.

Texas Eastern forms production subsidiary

OFFICIALS of Texas Eastern Transmission Corp., Shreveport, La., have announced formation of a wholly-owned subsidiary, Texas Eastern Production Corp., to engage in oil and gas exploration and production.

Primary purpose of the new company, a Delaware corporation, is to explore for natural gas reserves in connection with the parent company's transcontinental Big Inch natural gas pipeline system. The production firm will operate generally in the Southwestern states and will be staffed originally with the same personnel employed by the transmission company.

Production conference

(Continued from page 38)

to indicate or define the nature of a problem; the operator must devise, and apply the solution."

With the aid of charts and tables, Mr. Ferguson made available a wealth of valuable background material to aid in the practical interpretation of gas analysis for a wide variety of gas industry applications.

On the subject "Complete Replacement of Natural Gas Send Out," F. D. Howell, Dominion Natural Gas Co., Brantford, Ontario, Canada, told how both high Btu oil-gas and propane-air gas have been used successfully for 100 percent replacement of natural gas sendout. He said that after a period of correcting any existing poor adjustment or poorly designed appliances, this substitution can be made with acceptable customer satisfaction. Mr. Howell emphasized the fact that 100 percent substitution does not necessarily mean 100 percent interchangeability.

The gas mixing system used for city sendout was described in detail in a joint paper, "Controlled Gas Mixing" by W. H. Isaacs and R. B. Paquette, The Peoples Gas Light & Coke Company. Chicago distributes a mixed gas of 800 Btu content. This gas mixture consists primarily of 1,030 Btu natural gas and 550 Btu manufactured gas. The manufactured or base gas consists of coke oven gas augmented by reformed natural or carbureted water gas. These natural and base gases are blended or mixed together to produce a standard 800 Btu mixture for distribution.

The difficult subject of "Safety in Operation of Liquefied Petroleum Gas Plants" was covered by H. Emerson Thomas, H. Emerson Thomas & Associates, Westfield, N. J. As stated by Mr. Thomas, it is easy to forget about safety until an accident occurs. The most sensible way is to set up safety precautions before the accident and thus prevent it.

Points covered by Mr. Thomas included safety as a distinct part of operations, safety and a sound profitable financical structure, the value of having careful employees and training them well and the need for a well engineered plant for safety as well as operation. Pamphlet 59, of the National Fire Protection Association he said, should be used as a basic standard of installation. All employees should be versed in its provisions.

Brooklyn Union wins "Court of Flame" trophy

Brooklyn Union Gas Company representatives receiving national award for greatest number of "Court of Flame" gas water heaters sold for the year by the company's salesmen and dealers combined per thousand residential units registered in the GAMA contest. D. S. Whamond, Gas Appliance Manufacturers Association, presenting trophy to (left to right) Joseph A. Reynolds, John B. Frost and H. A. Diekmann

Use of oxygen in the manufacture of water gas has been a subject for widespread discussion over many years. Recent progress in the direction of low cost oxygen has stimulated renewed interest in this subject. The duPont company in September 1949 put into operation a 360-ton day oxygen plant and converted several standard UGI mechanical blue gas sets for oxygen service. This development was described by J. W. Blatchford, E. I. du Pont de Nemours & Co., Inc., Charleston, W. Va., in his talk "The Production of Water Gas With Tonnage Oxygen."

As the result of tests, Mr. Blatchford concluded that "the use of oxygen in coke gasification is advantageous from the standpoint of capacity, fuel utilization and maintenance of generating equipment. There do not appear to be insurmountable restrictions within reasonable limits in either the quality of fuel or the type of apparatus employed."

Opening the Wednesday morning general session, N. K. Senatoroff, Southern Counties Gas Co., Los Angeles, presented a comprehensive review of natural gas odorization development and practices. In addition, a bibliography and abstracts of available literature on gas odorization, prepared by Institute of Gas Technology, was distributed.

Odor intensity evaluation still remains the most controversial characteristic in odorant appraisal, Mr. Senatoroff pointed out. The only unmistakable test for odorant acceptance or rejection, he said, is customer reaction in the form of "leak order" service complaints.

He indicated that a gas odor should be early recognized and not confused with ordinary odors such as those from cooking.

The requirements of an ideal odorant were outlined by E. E. Johnson, California Research Corp., Richmond. He stated categorically that no such compound had yet been found. Those chemical mixtures most highly odorous, he explained, are usualy the most readily absorbed in passing through soil. While it is desirable to find an odorant that would smell like manufactured gas, the problem is to find one that is also potent, inert and nontoxic.

Effective methods of corrosion protection of condensers, purifying equipment and precipitators were described by J. L. Adkins, The Peoples Gas Light & Coke Company. Referring to condensers, he stated that coating the inside of the tube with a fine graphite material and with a rust resisting oil are two methods which have reduced corrosion.

Turning to purifying equipment, Mr. Adkins described a method which has protected steel work for 15 years. It consists of coating all exposed steel surfaces with a continuous coating of hot applied coal tar pitch with a melting point of 125 to 140°F. In protecting the steel bottoms, three layers of hot pitch are alternated with two layers of cheesecloth. Mr. Adkins also told how a change in the design of the gas flow has eliminated dif-

ficulties with an electrostatic precipitator.

A composite picture of the latest gas production equipment was presented by Carl A. Schlegel, United Engineers & Constructors, Inc., Philadelphia, chairman, A. G. A. Builders' Subcommittee. Manufacturers who contributed to this report were: Buell Engineering Co., Inc.; Cutler-Hammer, Inc.; The Gas Machinery Co.; The Girdler Corp. Ingersoll-Rand Co.; J. F. Pritchard & Co.; Koppers Co.; Roots-Connersville Blower Corp.; Stacey Bros. Gas Construction Co., and United Engineers & Constructors, Inc.

Dr. F. E. Vandaveer and J. J. Schmidt, The East Ohio Gas Co., Cleveland, collaborated on an exhaustive study of the importance and advantages of underground storage of natural gas. The paper was presented by Dr. Vandaveer. Economics of this type of storage were analyzed and various phases of storage field operations were pictured.

Of special interest, the authors reported on a new method of testing for underground migration of gas by comparing the Btu and specific gravity of the gas from test wells with that of the gas stored. During four years of experience with this method it has been possible to determine whether migration was occurring in 195 wells and to point out that an increase in rock pressure may not indicate migration. In storage areas, gas usually will not flow more than one mile underground, the authors reported. However, they added, a few instances of migration of 7,000 feet and one of 8,360 feet have been found.

J. G. Sweeney, The Brooklyn Union Gas Co., chairman, Tar Dehydration Subcommittee, brought the delegates up to date on experience with the continuous mechanical centrifuge. He also reported briefly on new tar dehydration systems used by large gas companies and cited additional experience of interest to small companies.

In conclusion, Mr. Sweeney noted that no two plants have the same kind of tar emulsion and even the characteristics of this material in a single plant can vary from day to day. Standard sulfonation tests are helpful, he said, in following the cracking of the oil and sometimes will furnish the clue as to why the emulsions are harder to break.

A paper by E. S. Pettyjohn and H. R. Linden, Institute of Gas Technology, Chicago, presented the results of IGT studies of the evaluation of oils for enrichment and oil gasification. The program is sponsored by A. G. A. Gas Production Research Committee under the PAR Plan.

Mr. Pettyjohn, who delivered the summary, compared the cost per therm of the enriching value against the cost of the oil minus the residual tar credit. He emphasized the desirability of using heavy residual oils properly selected on the basis of the carbon-hydrogen ratio—that is, within the range of 7.3 and 7.7 to obtain the lowest enriching value cost in carburetted water gas operation. Results of the entire study will be presented shortly in a bulletin.

Industrial & Commercial groups active

Meeting of A. G. A: Committee on Industrial & Commercial Gas Research: (Seated, left to right) L. T. Potter, chairman; F. T. Rainey, Roy E. Wright, J. C. Dorsey, R. C. Le May, A. D. Spillman; (standing) E. D. Milener, A. G. A.; J. P. Leinroth, Vance Uhlmeyer, S. L. Case, Jack Huebler, A. D. Frydendall, Dr. J. J. Turin, Henry Hartman, R. L. Manier, L. V. Cachat, H. A. Sutton, W. B. Kirk, A. G. A.

Industrial Processing: R. C. Le May (left), C. L. Nelson, P. R. Dreyer, chairman; G. R. Van Kampen, J. H. Mikula, R. H. Minton, Jr., E. C. Lundt, H. A. Diekmann, J. E. Clark, L. M. Humphrys

Industrial & Commercial Gas Copy Committee meeting in St. Louis: (Seated) J. P. Leinroth (left), chairman; A. F. Burns, F. T. Brooks, Vance Uhlmeyer, F. T. Rainey; (standing) H. V. Potter, A. G. A.; Christy Payne, Jr., Emil Hofsoos, H. A. Clark, C. W. Person, A. G. A.; W. M. Anderson, C. H. Lekberg, A. C. Evans

Luncheon conferences

Seven luncheon conferences on Tuesday and Wednesday afternoons drew

large audiences and intensive discussion of individual problems. Many conferees moved from one conference to another, taking copious notes on specific questions. The conferences, their officers and agenda were as follows:

Carbonization and coke—Forrest D. Miller, Philadelphia Coke Co., chairman; H. C. King, Rochester Gas & Electric Corp., alternate chairman. Topics included—unloading frozen coal, coal types and the expansion problem; what comprises good water gas; new type ammonia recovery equipment; packingless scrubber operation, and wall and roof carbon control.

High Btu Gas—B. M. Keys, Washington Gas Light Co., Washington, D. C., chairman; Gordon G. Howie, Cambridge Gas Light Co., Cambridge, Mass., alternate chairman. Topics—Cambridge experience; distribution of 100 percent natural gas substitute; controlled gas mixing, and also the use of gas analysis.

Oxygen and Its Application to Gas Making—C. R. Downs, chemical engineer, New York, N. Y., chairman; L. L. Newman, Bureau of Mines, Washington, D. C., alternate chairman. Topics—progress reports on tonnage oxygen; current costs of oxygen, and the long-range oxygen picture.

Plant Waste Disposal—Linn B. Bowman, Rochester Gas & Electric Corp., chairman; Dr. F. E. Vandaveer, The East Ohio Gas Co., alternate chairman. Agenda—waste disposal; present method of treatment, and new developments.

Chemistry in the Gas Industry—J. F. Foster, Battelle Memorial Institute, Columbus, Ohio, chairman; H. M. Killmar, Carborundum Co., Perth Amboy, N. J., alternate chairman. Topics—recent developments in the gum problem concerned with reforming of natural gas; limitation of enrichment by natural gas without appliance adjustments; recent developments in gasification in Europe; related research on fuels, and use of new experimental methods in the gas industry.

LP (Liquefied Petroleum) Gas—S. W. Horsfield, Long Island Lighting Co., chairman; William Kramer, Phillips Petroleum Co., New York, N. Y., alternate chairman. Topics—purging of LP-gas tanks; fire protection, and improvements in metering of liquid LP-gas.

Water Gas—A. G. Hall, The Brooklyn Union Gas Co., chairman; H. P. Richmond, Cumberland County Gas Co., Millville, N. J., alternate chairman. Topics—pre-heating air; silicon carbide refractories; removal of carbon deposits from checkers; steam accumulation, and reforming of natural gas.

Operating men at the conference showed that they are alert to the ever new possibilities opened up by research and technological developments. Their reports and discussions indicated that the gas industry can look forward to steady advances in the fields of gas production and chemistry.

OBITUARY

Floyd S. Parmenter

manager of sales, Southern Counties Gas Co., Los Angeles, Calif., died on May 14 following an illness which had kept him incapacitated for several months.

Mr. Parmenter spent his early life on the eastern seaboard where he was engaged in sales work. He moved to California in 1928, and after four years of sales activity, joined the Southern Counties sales organization in 1934. Assigned to the Monrovia district, he remained there until 1941, when he was made sales supervisor of the company's eastern division with headquarters in Pomona.

In 1945 he was promoted to assistant appliance sales manager in the general office in Los Angeles. In 1949 he took over the newly created post of sales manager.

He was a member of American Gas Association.

Bernard V. Pfeiffer

an executive of The United Gas Improvement Co., Philadelphia, died on May 13 after a long illness. He was 63 years old.

Mr. Pfeiffer took a prominent part in the technical activities of American Gas Association. He was also a member of Society of Gas Lighting and was a former president, Pennsylvania Gas Association.

One of the outstanding gas engineers in the country, at the end of World War II Mr. Pfeiffer was selected by the gas industry to represent it in a government survey of the German gas industry. He was manager of gas operations at UGI at the time of his death, having served with the company for 40 years.

Mr. Pfeiffer attended Stevens Institute of Technology and graduated in 1910 as a mechanical engineer. After graduation, he entered the employ of UGI as a cadet engineer in gas operations. He served with gas plants at Omaha, Neb., Syracuse, N. Y., and Nashville, Tennessee.

He is survived by his wife, Mrs. Kathryn Pfeiffer; a daughter, Harriet B. Pfeiffer, and a son, Bernard Victor Pfeiffer, Jr. Also by a sister, Margueretta Pfeiffer, Hoboken, N. J., and three brothers, Peter A. Pfeiffer, New York, N. Y.; Leonard Pfeiffer, East Orange, N. J., and George Pfeiffer, Hoboken, New Jersey.

Ervin H. Wetlaufer

former rate and appraisal engineer, Southern California Gas Co., died suddenly at his home in Los Angeles on May 15. He had retired on November 1, 1949.

He prepared for an engineering career at University of Wisconsin, where he took a degree of Bachelor of Science. His first position was with H. L. Douherty Operating Company in Denver and Easton, Pa., where he secured his first experience in rate and appraisal. Following service with W. A. Baehr Company as a consulting engineer, and with H. T. Lea Company in Chicago, he became associated with North American Light and Power Company in Chicago.

In 1923, Mr. Wetlaufer moved to California to take a position with Southern California Gas Company as rate and appraisal engineer. He remained in that position until his retirement.

He was a member of American Gas Association.

Thomas W. Patterson

formerly a mechanic at American Gas Association Laboratories, died April 19, 1950. Mr. Patterson retired from active service last July, the first Laboratories employee to do so under the Association's pension plan.

He was born in 1881, joined the Laboratories on November 18, 1942, and has worked in the building trades all his life.

Samuel Klein

founder of the present Caloric Stove Corp., died at his home in Elkins Park, Pa., early Monday morning, May 22. Mr. Klein was in his ninety-fifth year.

Born in Germany in 1855, he came to this country in 1882 and started his stove business in 1890. He was active in the management of the company until about nine years ago, watching it grow to a nationally known manufacturer of gas ranges with warehouses throughout the nation.

The company now occupies executive offices in Philadelphia and a research laboratory and manufacturing plant at Topton, Pennsylvania.

Engaged in the management of the business today are Mr. Klein's five sons: Nathan, Gustav, Julius, Harry W. and Meyer.

Mr. Klein maintained a shop in downtown Philadelphia long after the plant facilities had been moved simply because it was a haven for employees of many years' standing.

F. Jefferson Redfield

a member of Accounting Section, American Gas Association, died on April 29, 1950. At the time of his death Mr. Redfield was superintendent of the credit and collection department, The Peoples Gas Light and Coke Co., Chicago. He was formerly an active member of A.G.A. Customer Collections Committee.

Equitable Gas announces personnel changes

C. J. Mulholland

H. H. Pigott

F. N. Wolf

B. H. Smyers, Jr.

H. S. Netting, Jr.

TOP PERSONNEL elections and appointments have been announced for Equitable Gas Co., Pittsburgh. Charles J. Mulholland has been elected vice-president and treasurer; H. H. Pigott has been elected vice-president in charge of operations, and Frederick N. Wolf, vice-president in charge of engineering. Also announced are the election of H. S. Netting, Jr., as secretary, and appointment of B. H. Smyers, Jr., as general counsel for the company and its subsidiaries. John T. Brown has been appointed attorney for the company.

Mr. Mulholland, the new vice-president and treasurer, was formerly secretary and treasurer, North Shore Gas Co., Waukegan, Illinois. He attended University of Illinois and University of Richmond. His extensive business career includes service as secretary and treasurer of utilities in Virginia and Ohio.

He is a member of American Gas Association, American Petroleum Institute, Institute of Internal Auditors, and Controllers Institute of America.

Mr. Pigott, the new vice-president in charge of operations, is a graduate of University of West Virginia. Since he joined Equitable Gas Company as field agent in September 1927, he has served as assistant land agent, land agent, general superintendent of production and transportation, and operating manager.

He is a director of Pennsylvania Natural Gas Men's Association, and a member, West Virginia Oil and Natural Gas Association, and Engineer's Society of Western Pennsylvania.

Mr. Wolf, the new vice-president in charge of engineering, attended Carnegie Institute of Technology, joining Equitable Gas Company in 1922 as a field man. He has served as gas measurement engineer, field engineer, distribution supervisor, research engineer, assistant to operating manager, assistant to vice-president and general manager, and manager of planning and development. Since April 1947 he has been a director, Equitable Gas and Pittsburgh and West Virginia Gas Companies.

Mr. Wolf is a member of American Gas Association, Pennsylvania Natural Gas Men's Association, West Virginia Oil and Natural Gas Association, and Engineers' Society of Western Pennsylvania.

Mr. Smyers, general counsel for the company and its subsidiaries, attended University of Pittsburgh and received an LL B degree from Duquesne University Law School. He was admitted to practice law before local and state courts, and later the U.S. Supreme Court.

He joined Philadelphia Company and subsidiaries in November 1927 as an attorney in the law department. Since then, nearly all his work has been with the gas companies. Mr. Smyers is a member and counsel of Pennsylvania Natural Gas Men's Association.

The new secretary, Mr. Netting, was formerly assistant secretary, Philadelphia Company and subsidiaries. He attended University of Pittsburgh, Geneva College extension classes and Duquesne University.

Mr. Netting joined the company in July 1930 in the secretary's department. Since then he has been general clerk in the department; correspondent and clerk, chief clerk, and office manager, executive department; as well as assistant secretary, the post he held at his recent election.

Equitable Gas Company's new attorney, Mr. Brown, has been serving as attorney with Philadelphia Company and subsidiaries, law department since October 1938. He received his AB degree from University of Pittsburgh and his LL B from the university's law school.

Personal and otherwise

Beard joins Ebasco as gas engineer

C. S. (CHET) BEARD has joined Ebasco Services Inc. as gas engineer. Mr. Beard has been identified with the gas and oil industry and instrumentation in California for many years.

He studied electrical and chemical engineering at University of Minnesota and University of Southern California and entered the gas industry in 1927. Later he worked in the oil fields of Southern California as an experimental engineer developing operational methods and patent structure for a gas lift pump for oil production. He became a gas engineer for CCMO Co., the producing subsidiary of the Sante Fe Railway stationed at Ventura and Taft, California.

During his 25 years he has been active in technical societies including chairmanship of Taft Chapter, Natural Gasoline Association, board member of Southern California Meter Association and most recently 1940-50 president of Northern California Section, Instrument Society of America.

Ohio Fuel Gas names assistant treasurers

HARRY S. HAHN and Walter D. Betsch have been elected assistant treasurers, The Ohio Fuel Gas Co., Columbus, Ohio.

Mr. Hahn started work 33 years ago with Columbus Gas & Fuel Co., a predecessor of Ohio Fuel Gas, after he had attended Ohio State University. In 1932 he was named general credit manager, and in 1943 was appointed manager of customers' accounting and collecting.

Mr. Betsch joined The Ohio Fuel Gas Company in Columbus in 1931, following his graduation from Ohio Wesleyan University. In 1940 he was made supervisor of taxes, insurance, and depreciation in the accounting department. Last year he was placed in charge of the IBM general accounting installation, in addition to other duties.

Both men are members of the Accounting Section, American Gas Association. Mr. Hahn has served over a long period as chairman of project committees of the Customer Accounting Committee. Mr. Betsch has been active on the Taxation Accounting Committee for many years.

H. S. Hahn

W. D. Betsch

McKee retires from Southern Counties post

NORMAN R. McKEE, vice-president, Southern Counties Gas Co. of California, went into retirement on May 1, after more than 35 years' service with the company and around 47 years in the gas and oil business in Los Angeles.

Born in Toronto, Canada, Mr. McKee moved to California in 1903. He found employment first with the old Los Angeles Gas & Electric Corporation, remaining with that firm for four years. From 1907 to 1915 he was with Associated Oil Co., and Standard Oil Co., successively. He joined Southern Counties Gas Company on December 21, 1915.

Mr. McKee was made division manager of the Santa Monica Bay Division in 1916, remaining in that post until 1918 when he became sales engineer with headquarters in Los Angeles. In 1924 he was made purchasing agent, retaining that position until 1934, when he was elected vice-president in charge of sales, purchasing and public relations functions.

Mr. McKee is a member of American Gas Association and a past-president of Pacific Coast Gas Association. He is succeeded as vice-president in charge of sales and public relations by Frank Wright, former manager of the company's Ventura Div.

N. R. McKee

Floyd advanced by Milwaukee manufacturer

J. M. FLOYD, vice-president in charge of manufacturing, A. O. Smith Corp., Milwaukee, Wis., has been named executive vice-president of the company. Mr. Floyd will take over general operating supervision of the company under the general direction of the president, W. C. Heath.

Mr. Floyd has been in charge of manufacturing since he came to A. O. Smith in 1936 from Bendix Aviation Corporation, South Bend, Indiana. While serving with the latter firm he had been works manager of that company's Bendix products division.

In addition to his new position, he is a member of the board of directors and of the executive committee of A. O. Smith. He also holds the position of vice-president, A. O. Smith Corp. of Texas.

Texas Eastern names five vice-presidents

FIVE executives have been advanced to vice-president by Texas Eastern Transmission Corp., Shreveport, Louisiana.

The men promoted include: C. L. Brockschmidt, vice-president in charge of gas sales; Walter E. Caine, vice-president and treasurer; O. S. Carpenter, vice-president and comptroller; Mills Cox, vice-president in charge of gas supply, and B. D. Goodrich, vice-president and chief engineer.

C. L. Brockschmidt

W. E. Caine

O. S. Carpenter

Mills Cox

B. D. Goodrich

Mr. Brockschmidt, who has served as sales manager for Texas Eastern, joined the company in 1947. Previously, he was with Standard Oil Co. of New Jersey as a specialist in liquified petroleum gas. For 14 years he was combustion engineer with Mississippi River Fuel Corporation. During the war he was with War Production Board in Washington.

Walter E. Caine has been associated with Texas Eastern since August 1948. For four years he was with American Gas Association as director of the Bureau of Statistics. From 1940-1944 he was assistant chief director of rates and research with Federal Power Commission. Mr. Caine has also been associated with 20th Century Fund, Public Service Commission of Wisconsin, and the REA.

O. S. Carpenter, company comptroller, joined the firm in 1947. Previously he was a certified public accountant in Austin, Texas, and for five years served with the Army and Governmental Agencies. Between 1935-1940, Mr. Carpenter held various positions in the state government of Texas including auditor, executive director of the Texas Old Age Assistance Commission, and chairman and executive director, Texas Unemployment Commission.

Mills Cox, in charge of gas supply, joined Texas Eastern in 1948. Before joining the company he was with Penrod Drilling Company in Shreveport. From 1923-1942 he was associated with Mills Bennett Production Company in Houston.

B. D. Goodrich, chief engineer, joined Texas Eastern in 1947 after seven and a half years with United Gas Pipe Line Company as engineer on new construction work. He is a graduate of Rice Institute.

Thorburn heads new Canadian company

FORMATION of a new company for engineering, fabrication, and erection of gas plant equipment, The Gas Machinery Co. (Canada), Ltd., brings to the Canadian gas industry the newest in design and manufacture of plant equipment and industrial furnaces.

The new company is associated with The Gas Machinery Co., Cleveland. All research, engineering, and installation facilities of the Cleveland company will be available to the Canadian firm.

Heading the new company as president is Donald H. Thorburn, with 23 years of service in the industry. A native of Ontario, Mr. Thorburn served with Windsor Gas Company and Union Gas Co. of Canada. From 1938-1947 he was manager of the industrial and commercial departments, United Gas & Fuel Co., Hamilton, Ontario.

In 1947, Mr. Thorburn served as consultant with Dominion-Foundries & Steel, Ltd., Hamilton, to design and supervise construction of a propane-air plant for that company. In 1948, he became manager of the gas division, Salem Engineering (Canada), Ltd., building gas plants for various companies.

Mr. Thorburn is a member of American Gas Association, Canadian Gas Association, Natural Gas & Petroleum Association, and American Society for Metals. For six years, he was a member of the executive council, Ontario Chapter, of the latter society. He served for seven years as representative of Canadian Gas Association on A. G. A. managing committee, Industrial Section, and as provincial representative on Public Utilities Wartime Workshop Board, 1941-1945.

He is one of the original members and the first Canadian to be awarded honorary life membership in the Hall of Flame, A. G. A. Industrial & Commercial Gas Section.

For the present, offices of the new company will be in the Herald Building, Hamilton, Ontario. Serving with Mr. Thorburn on the board of directors is Vincent Wager, Hamilton, Ontario. Another director is K. W. Stookey, president, The Gas Machinery Co., Cleveland, Ohio.

Anderson elected president of LPGA

PETER A. ANDERSON, president, Utilities Distributors, Inc., Portland, Me., was elected president of Liquefied Petroleum Gas Association, May 11 at the final session of the group's annual convention and trade show in the Palmer House, Chicago. He succeeds Si G. Darling, president, Darlingas, Inc., Pratt, Kansas.

Other officers for 1950-51 include William S. Lander, Rulane Gas Co., Charlotte, N. C., first vice-president; F. N. Mabee, Colorado Natural Gas & Fuel Co., Denver, Colo., second vice-president; Walter Miller, Dri-Gas Corp., Chicago, treasurer, and Arthur C. Kreutzer, Chicago, secretary.

Section chairmen named at the convention are Harris Helmer, Badger Gas Products, Platteville, Wisc., marketers; Pierre Vinet, Geo. D. Roper Corp., Rockford, Ill., appliance manufacturers; Joseph Ketner, Delta Tank Manufacturing Co., Baton Rouge, La., equipment manufacturers; H. W. Rigterink, Sun Oil Co., Philadelphia, Pa., producers; K. J. Forderbrugen, Minnesota Valley Natural Gas Co., St. Peter, Minn., utilities, and Paul Thompson, Standard Oil Co. (N. J.), New York, N. Y., international section.

Attendance at the LPGA convention reached a record 1,800 persons.

Iowa company appoints purchasing director

APPOINTMENT of Erwin F. Math, assistant purchasing agent, J. I. Case Co., Bettendorf, Iowa, as director of purchases, Iowa-Illinois Gas and Electric Co., Davenport, Iowa, was announced recently.

Mr. Math succeeds Frank H. Hughes, director of purchases for United Light and Railways Service Company and the Iowa-Illinois Gas and Electric Company since 1947. Mr. Hughes has accepted a similar position with American Natural Gas Service Corp., Detroit.

In his new capacity, Mr. Math will be in charge of purchases for the utility company's operations in Rock Island, Moline and East Moline, Illinois and Davenport, Cedar Rapids, Iowa City, Fort Dodge and Ottumwa, Iowa.

Prior to becoming connected with the Case Company three years ago, he spent six years in the purchasing department of International Harvester Company.

White returns to LPGA executive post

HOWARD D. WHITE, former executive vice-president, Liquefied Petroleum Gas Association, returns to the organization June 1 in the same capacity. Since October 31 of last year, he has been identified with Perlite Development Corp., Albuquerque, New Mexico.

Arthur C. Kreutzer, managing director of the association during Mr. White's absence, has been named vice-president and general counsel.

Mr. White, who became executive vice-president of the association in February 1946, was formerly engaged in public relations and sales promotion work. Mr. Kreutzer, counsel and secretary for LPGA since April 1946, is a member of the Chicago Bar.

Loomis made Columbia Gas System official

C. E. LOOMIS, one of the top engineers for Columbia Gas System has been named to the newly created post of assistant vice-president of The Columbia Gas System, Inc.

Mr. Loomis first joined Columbia as a statistician in one of the system's operating companies and has been on the engineering staff in the New York office since November 1, 1945. He will act as chief assistant to George S. Young, executive vice-president. Mr. Loomis is a member of American Gas Association.

Consolidated Edison makes two appointments

APPOINTMENT of Ray Martin as director of advertising has been announced by Consolidated Edison Co. of New York, Inc. Dennis S. Melvin has been named manager of the advertising department.

Mr. Martin began his public utility career as a salesman with Consolidated Gas Company in 1922. A year later he became director of display. Following mergers of various New York gas and electric companies in 1936, he became art director of Consolidated Edison's advertising department. He was made assistant manager of the department in 1942 and manager in 1946. In 1948 he became assistant director of advertising.

Mr. Martin has pioneered in the dramatic presentation of the uses of electric and gas appliances in public utility advertising. Displays prepared under his direction have won over a hundred awards in national contests.

Mr. Melvin will concentrate on administrative and organizational matters. He has held various administrative posts in Consolidated Edison System Companies since he joined United Electric Light and Power Company as a district salesman in 1929.

Following the company mergers of 1946, he became manager of appliance promotion bureau of Consolidated Edison's sales department. After 16 years of sales work, he transferred to the purchasing and stores department. At the time of his present appointment he was manager, construction contracts bureau in that department.

Hall made A.G.A. officer

E. L. Hall

EDWIN L. HALL, director of American Gas Association Laboratories in Cleveland and Los Angeles, has been appointed an assistant managing director of the Association, according to an announcement by H. Carl Wolf, managing director of A. G. A.

Mr. Hall joined A.G.A. in May 1945 as coordinator of gas production research. He was appointed director of the Laboratories on November 1, 1947. His new appointment is in line with the increasing importance of the Laboratories' activities.

Cincinnati elects director

W. R. Keagy

WALTER R. KEAGY, vice-president in charge of customer relations, The Cincinnati Gas & Electric Co., was elected a member of the board of directors of the company at the annual meeting of stockholders early last month.

Mr. Keagy joined the company in 1929 as manager of the service department. He was elected a vice-president in March 1945.

He attended Carnegie Institute of Technology and later received a law degree from University of Cincinnati. He is a member of American Gas Association.

Pittsburgh vice-president

E. D. Clutter

EARL D. CLUTTER has been named operating vice-president, The Manufacturers Light and Heat Company and associated companies in the Pittsburgh Group of Columbia Gas System. Mr. Clutter has been general superintendent since January 1947.

He joined The Manufacturers Light and Heat Company in 1915. After serving in various capacities, upon the formation of the Pittsburgh Group, he was named superintendant of pipelines. In 1936 Mr. Clutter became superintendent of gas transmission. He was appointed superintendent of gas transmission and distribution in 1944.

As operating vice-president he will continue to have general supervision of the gas production, transmission and distribution departments, and the gas engineering, civil engineering and transportation departments.

Higgins takes gas post with General Electric

A. E. Higgins

APPOINTMENT of A. E. Higgins to the newly created post of manager of gas utility relations, air conditioning department, has been announced by General Electric. Creation of the new position is in line with the company's increased activities in the gas heating field.

Prior to the appointment, Mr. Higgins was vice-president, Rockwell Manufacturing Co., International Division, New York.

He has been associated with the gas industry since 1927 when he was manager of field promotion, Blue Star Home Campaign. In 1931 he was made secretary of the Natural Gas Department, American Gas Association. He served in this capacity until 1937 when he became vice-president, Pittsburgh Equitable Meter Co., and Merco Nordstrom Valve Co., since merged to form Rockwell Manufacturing Company.

He is a member and actively identified with American Gas Association, Mid-West Gas Association, Southern Gas Association, American Petroleum Institute, Gas Appliance Manufacturers Association, and Engineers' Society.

For his part in organizing the natural gas engineering course at Texas College of Arts and Industries, Mr. Higgins was awarded an honorary degree by that institution in 1938.

Two appointments announced by Texas Gas

H. G. Horstman

H. G. HORSTMAN, for many years associated with Public Service Co. of Indiana, has been named director of sales and customer relations, Texas Gas Transmission Corp., Owensboro, Kentucky. He succeeds the late Everett P. Russell. W. M. Elmer, company treasurer, has been elected a vice-president.

For the last five years Mr. Hortsman was personnel director for Public Service Co. of Indiana; later served in the operations department as assistant to the vice-president, and between 1933 and 1944 was gas and water distribution engineer.

Mr. Hortsman is a graduate of Purdue University with a degree in chemical engineering. He has been connected with Northern Indiana Gas & Electric Co., Peru Gas Company and Utilities Service Company. He has served as chairman of several American Gas Association committees and is a past-president and director of Indiana Gas Association.

Mr. Elmer has been with Texas Gas since June 1947, when he was employed as comptroller, Memphis Natural Gas Co., a predecessor. In April 1948, following merger of Memphis Natural and Kentucky Natural Gas Corporation with and into Texas Gas, Mr. Elmer was elected comptroller of Texas Gas. Last May he was appointed treasurer.

Previously, he was associated for nine years with Arthur Andersen & Co., public accountants and auditors, largely in natural gas and other utility accounting.

Oldham fills new post at Southern Union

H. N. Oldham

H. N. OLDHAM has been appointed assistant operating manager of Southern Union Gas Company and has moved from Carlsbad, N. M., to Dallas, Texas, home office of the company.

Mr. Oldham was manager for 13 years of Southern Union's southeastern New Mexico district and has been with the natural gas utility company a little more than 15 years.

The newly created executive position which he fills was necessitated by the company's rapid expansion and by further anticipated growth.

An engineering graduate of University of Arkansas, Mr. Oldham worked for Oklahoma State Highway Department before he joined Southern Union in January 1935. After brief service in the Dallas office, he served as industrial engineer at Santa Fe and as assistant district manager at Carlsbad before becoming district manager.

He is a member of American Gas Association.

Manufacturers announce personnel changes

● **American Stove Co.**, St. Louis, Missouri —Harold V. Floerke has been named sales service manager replacing E. H. Kahler, who became district representative in North and South Carolina. Both appointments were effective April 1.

Mr. Floerke attended Jefferson College and Washington University, St. Louis, before joining American Stove Company in December 1945. He entered the research laboratory and has served since as a research engineer.

Mr. Kahler is a veteran of the gas range industry, having more than 25 years of experience in laboratory research and personnel work.

Elliott advances in Detroit

E. E. Elliott

E. E. ELLIOTT has been elected assistant secretary, Michigan Consolidated Gas Co., Detroit.

Mr. Elliott began his career with the company as a clerk in the accounting department in 1937. He was later transferred to the secretary's office and made assistant to the secretary in December 1945.

Following graduation from the school of business administration of Albion College in 1930, Mr. Elliott was employed for about three years in the refining laboratory and treating plant of an oil company.

He attended Detroit College of Law for two years. He is a member of American Gas Association, Michigan Gas Association, and National Tax Association.

Cincinnati elects Turner

C. M. Turner

C. M. TURNER has been elected vice-president, The Cincinnati Gas & Electric Co., and its subsidiary, The Union Light, Heat & Power Co., according to a recent announcement.

Mr. Turner is a graduate engineer of University of Washington, Seattle. He has been connected with the utility industry for 30 years, first in the operations end of the business with the City of Seattle Light Department and with Puget Sound Power & Light Company. For five years he was assistant engineer with Washington State Regulatory Commission in Olympia.

In 1930 Mr. Turner joined Electric Bond & Share and its subsidiary, Ebasco Services Inc. He served these companies for 20 years as a consultant in various sections of the country. He is a member of American Gas Association.

Strait retires

EDWARD N. STRAIT retired from Pioneer Service & Engineering Co., Chicago, on May 1, 1950.

Mr. Strait joined the staff of a predecessor company in 1916 to organize a rate and research section of which he has since been manager. He left the Railroad Commission of Wisconsin, pioneer in public utility regulation, to accept this post. He has been a member of the rate committees of American Gas Association and Edison Electric Institute for many years and has held the chairmanship of each.

Adams heads A.G.A. accident prevention group

ACTIVITIES of the Association's Accident Prevention Committee are being pushed under the chairmanship of W. H. Adams, safety director, The Manufacturers Light and Heat Co., and associated Pittsburgh Group companies in The Columbia Gas System, Inc. Mr. Adams has been appointed to complete the unexpired term of the former chairman, the late Paul L. G. Hasskarl, who died recently.

The new chairman is a 45-year veteran in safety education work throughout Columbia Gas System. He also is a member of the executive committee of the public utilities section, National Safety Council.

A. G. A. Accident Prevention Committee recommends means and methods for minimizing accidents, and also reviews applications for the Association's Meritorious Service Award, McCarter Award, and the Million Man-Hour Award. Also, the group collects, interprets and disseminates accident statistics, and promotes and publicizes safety procedures.

Meeting at Association headquarters in New York last month, 21 members of the committee dispatched a joint letter of sympathy to Mr. Hasskarl's widow.

W. H. Adams

Roper appoints

MRS. LUCY EKLUND has been appointed home economist for Geo. D. Roper Corp., Rockford, Ill., and will work closely with both the sales and research departments in food and product testing.

At the time of her graduation from Purdue University in 1947, she was the subject of a cover photograph and feature article in "What's New In Home Economics." Following graduation, she joined Swift and Company in Chicago as a home economist.

Mrs. Eklund possesses outstanding qualifications in food photography, demonstration work and recipe testing.

Setchell takes new post in Operating Section

EFFECTIVE June 1, 1950, J. Stanford Setchell has been appointed assistant secretary of the Operating Section, American Gas Association.

Since the beginning of the year Mr. Setchell has been serving as assistant to A. Gordon King, secretary of the Operating Section, and has handled many of the preparations for the Section's 1950 spring conferences.

Mr. Setchell is a graduate of Polytechnic Institute of Brooklyn with the degrees of bachelor and master of mechanical engineering. He first joined A.G.A. in October 1936 as assistant to the utilization engineer and in September 1940 was advanced to assistant utilization engineer. He entered the Navy in September 1943, returning in February 1946 to his post in the A.G.A. Utilization Bureau.

J. S. Setchell

Ker-choo and you—what to do

● The common cold is one of the great unsolved mysteries of modern life. Each year it takes an economic toll of two billion dollars in the U.S.A. alone. It causes untold misery to millions of sufferers. Yet what causes colds and what cures them have been medical mysteries for over 2,000 years. Here are some of the things you ought to know about the nation's No. 1 disease.

Who has colds? . . . Nearly everyone has at least one cold a year . . There are 500 million colds a year in the U.S.A. . . . Any day in winter you'll find over 20 million people suffering from a cold . . . Two out of three people have three colds a year . . . Two out of eight people have four colds a year.

What does a cold cost? . . . A three-day cold costs the average person $25 . . . Colds cause 50-60 percent of all absences from work . . . Two billion dollars a year is the estimated cost of colds in the U.S.A. It is the nation's most costly disease . . . Colds cause five times as much loss of production man hours as do strikes . . . In World War II colds caused over half of all absenteeism in war plants; they cost one and one-half million man days a year in war industries.

What is a cold? . . . Man has been trying to find out what causes colds and how to cure them for over 2,000 years without much success. . . . We got our first glimpse of a cold bug in 1947 when researchers of the U. S. Public Health Service isolated a virus causing one type of cold. . . . An air-borne disease. Most scientists think that colds are transmitted through the air by viruses so tiny they pass right through the finest filters.

How you catch cold. . . . One good sneeze can send 20,000 infection-laden droplets shooting as far as 12 feet at a speed of 150 feet per second. After an hour, 4,000 of them will still be in the air. . . . You can catch it before the other fellow knows he's got it. A person can be passing a cold on to others two days before he knows he has it. . . . Rapid changes of temperature set the stage for colds. You don't actually catch a cold by being chilled or wet, but your resistance to the cold bug is lowered.

Interesting facts about colds. . . . Only man and chimpanzees suffer colds. Dogs, cats, rabbits and other lower animals can't catch cold. . . . Just because you've just had a cold is no reason you won't catch another—and another. . . . Worriers catch cold easier, in fact any emotional upset makes people more likely to come down with a cold. . . . In ancient times people blamed their colds on such things as decaying leaves, face powder, cats, the influence of comets. . . . Apparently, women are the "weaker" sex where the cold bug is concerned.

How do you know it's a cold? . . . Signs of a cold appear one to four days after exposure. . . . Thirty percent of irritation is in your nose. Other signs are aches, chills, depression, headaches, fever of 100-102 degrees, throat inflamed or congested. Gets worse for 1-1½ days. . . . Other signs during convalescence are weakness, loss of weight, nervousness, insomnia, and neuralgia.

What can you do about colds? . . . (1) Avoid people with colds as much as possible. . . . (2) Beware of fatigue—avoid overwork and get plenty of rest. . . . (3) Keep feet warm and dry by wearing rubbers and overshoes. . . . (4) Keep out of drafts. . . . (5) Visit a dispensary; there's a 50-50 chance they can help you.

So what . . . you've got a cold! . . . (1) Go to bed and rest. . . . (2) Eat light meals with nourishing foods. Drink plenty of water, fruit drinks, soups, etc. . . . (3) Don't blow your nose like a bugle. It forces the infection into your sinuses and eustachian tubes. . . . Just sniffle! . . . (4) Be sure to use your handkerchief to stifle coughs and sneezes to prevent others from catching your cold. . . . (5) Call the doctor. . . . If you have fever, aches or a racking cough *for more than 24 hours—DANGER!* Call the doctor *at once* if you have chills or rust-colored sputum.

—Rubber Manufacturers' Association

Sincerity

● No tree, no drop of water, no blade of grass carries a label of identification. What they are is so evident that no label is necessary.

Sincerity is like that. We may write "Sincerely yours" at the end of letters, but the reader knows whether or not we are sincere without that subscription.

Sincerity is built into machinery, golf balls, Briquets; it is woven into the work we do. It is expressed in our tone of voice, our demeanor, the words we choose, the smiles we give—if we are truly sincere.

The reverse is equally true; no one needs to label his insincerity because it is advertised in gigantic letters by his every act or word.

Like the tree, the drop of water, the blade of grass, sincerity is simplicity itself. It is easy to achieve, too. All one has to do is to be true to himself and sincerity will have been achieved.

—The Blue Flame (Portland Gas & Coke Company)

Indiana gas men elect Graham president

AN ALLTIME RECORD attendance at the fortieth annual convention of Indiana Gas Association, April 27 and 28, elected C. K. Graham, Southern Indiana Gas & Electric Co., president. E. E. Linburg, Richmond Gas Corp., was named vice-president, and C. W. Goris, Northern Indiana Public Service Co., was reelected secretary-treasurer.

In addition to the president's address by A. E. Hatley and the secretary-treasurer's report by Mr. Goris, the program included seven major talks by industry and guest experts.

Speaking on "Hydrocarbons, Unlimited," Paul R. Taylor, vice-president, Stone and Webster Service Corp., New York, N. Y., outlined "some of the basic thinking, historical and economic facts, planning and ingenuity that have led to the increasing development of the natural gas pipeline business in a short period of about 25 years."

A fast-moving inspirational address was delivered by G. A. Saas, president, G. A. Saas and Co., Indianapolis, under the title "The Thirteenth Doughnut." Mr. Saas told his listeners that "the best advertisement is written on the wagging tongue of a satisfied customer."

Newly elected officers of Indiana Gas Association: (Left to right) E. E. Linburg, Richmond Gas Corp., vice-president of the association; C. K. Graham, Southern Indiana Gas & Electric Co., president; C. W. Goris, Northern Indiana Public Service Co., reelected secretary-treasurer at the group's recent convention

Another inspirational talk, "A Fool There Was," was presented by Ed Dowling, Indianapolis.

Need for maintaining "a positive and aggressive spirit, backed by a sincere desire to serve and sell," was stressed by H. Carl Wolf, managing director, American Gas Association.

Calling attention to the gas industry's increased stature and responsibilities, Mr. Wolf prescribed a simple four-point program of defense against outside attacks.

(1) strive always to render the best possible service at the lowest possible rates; (2) maintain the best possible local, public and employee relations; (3) tell each company's story locally and nationally, and (4) settle differences within the gas industry without recourse to courts or other outside agencies.

"The Significant Trend of Business Morals" was reviewed in an enlightening talk by W. Paul Jones, president, Servel, Inc., Evansville, Indiana. "Never before," he declared, "has business been so willing or so capable to police its own practices and to tread the straight and narrow path."

"Our Future Is in Our Own Hands" according to Lyle C. Harvey, president and general manager, Affiliated Gas Equipment, Inc., Cleveland. *(Excerpts from Mr. Harvey's talk appear on page 42 of this issue of the Monthly.)*

Final speaker on the program was H. C. Sauvain, professor of finance at Indiana University, who presented "A Long-Term View of Business Trends."

Associated organization activities

Lever made Pennsylvania gas president

THOMAS S. LEVER, JR., The Philadelphia Gas Works Co., was elected president of Pennsylvania Gas Association during the forty-second annual meeting at Galen Hall, May 16-18. Approximately 425 gas men from Pennsylvania and adjoining states attended.

Members elected W. E. L. Irwin, Philadelphia Electric Co., as first vice-president. Gordon M. Jones, Consumers Gas Co., was named second vice-president; T. W. McDonald, York County Gas Co., was elected third vice-president; William Naile, Lebanon Valley Gas Co., secretary, and James A. Schultz, Consumer Gas Co., treasurer.

W. Paul Jones, president, Servel, Inc., was guest speaker on Tuesday evening. Three major addresses headed the Wednesday program. Orlo B. Holman, The Philadelphia Gas Works Co., discussed "Experiences with Fuel Bed and Cyclic Catalytic Reforming of Natural Gas in Philadelphia." Charles L. Fritz, Philadelphia Electric Co., spoke on "Distribution System Reconditioning," and Dr. Robert P. Brecht, Wharton School of Finance and Commerce, on "Modern Management Techniques."

Howard B. Noyes, vice-president, Washington Gas Light Co., Washington, D. C., was Thursday lead-off speaker on "Public Relations During the Conversion from Manufactured Gas to Natural Gas." He was followed by H. E. Jallas, vice-president, Cribben & Sexton Co., on the topic "It's Got It"; D. C. McDermand, Hamilton Manufacturing Co., on "Profit Unlimited," and Milton J. Firey, Congress Hotel, "Visual Selling."

Gruhl heads Wisconsin utilities group

ALFRED GRUHL, Milwaukee, assistant vice-president, Wisconsin Electric Power Co., recently was elected by mail ballot as president of Wisconsin Utilities Association. Mr. Gruhl succeeds Carl A. Altenbern, Burlington.

E. H. Cotton, Eau Claire, vice-president in charge of operations in Wisconsin, Northern States Power Co., was elected vice-president, succeeding Mr. Gruhl.

Irwin P. Steybe, Milwaukee, assistant secretary and assistant treasurer, Wisconsin Public Service Corp., was elected treasurer, succeeding Paul J. Imse, Milwaukee Gas Light Company.

The new president is a graduate of University of Wisconsin. He entered the utility industry in 1932 as junior engineer with Milwaukee Electric Railway & Light Co., predecessor of Wisconsin Electric Power Company. He advanced successively to research engineer and to assistant vice-president.

Alfred Gruhl

E. H. Cotton

New A.G.A. members

Gas companies

Michigan-Wisconsin Pipe Line Co., Detroit
(C. T. Dickeman, executive vice-president)
East Tennessee Natural Gas Co., Knoxville
(Franklin T. Rainey, vice-president)

Associate companies

W. C. Gilman & Co., New York, N. Y.
(W. C. Gilman, partner)

Holding companies

Pacific Lighting Gas Supply Co., Los Angeles, Calif.
(L. M. Edwards, vice-president & general manager)

Manufacturer companies

Ace Tank & Boiler Co., Los Angeles, Calif.
(Bernard E. McClanahan, owner)
Anchor Div.—Stratton & Terstegge Co. Inc., New Albany, Ind.
(E. M. Clifford, general manager)
Banner Manufacturing Co., Columbus, Ohio
(J. M. Goddard, partner)
Beverly Heating Supply Co., Beverly Hills, Calif.
(E. L. Payne, president)
Cahill Forge & Foundry Co., Chattanooga, Tenn.
(E. W. Tubbs, president & general manager)
W. T. Carmichael Limited, East Pittsburgh
(W. M. Higgins, American representative)
Dewey-Shepard Boiler Co., Indianapolis, Ind.
(Robert B. Rhoads, sales manager)
Evans Products Co., Plymouth, Mich.
(George M. Schueder, chief engineer)
Good Items, Inc., Chicago, Ill.
(Samuel A. Kruss, president)
Heating Publishers, Inc., New York, N. Y.
(A. E. Coburn, editor)
The Hess Co., Cicero, Ill.
(A. L. Anderson, manager, heating division)
Koppers Co., Inc., Pittsburgh, Pa.
(J. Hawley Taussig, manager)
Koppers Co., Inc., Gas & Coke Div., Pittsburgh, Pa.
(M. T. Herreid, vice-president)
Lyon Metal Products, Inc., Aurora, Ill.
(H. G. Knuth, manager)
McGraw Electric Co., Chicago, Ill.
(Scott Campbell, assistant general manager)
National Gas Logs Inc., New York, N. Y.
(Herman Nielsen, president)
Sid E. Parker Boiler Manufacturing Co., Inc., Los Angeles, Calif.
(Sid E. Danenhauer, vice-president)
Perfection Water Heater Co., Los Angeles
(L. H. Janssen, president)
Plumbing & Heating Journal, New York, N. Y.
(Charles H. Burkhardt, heating editor)
Regal Heater Corp., Los Angeles, Calif.
(H. C. Siler, president)
Remote Controls, Inc., Alhambra, Calif.
(Tracy B. Ryon, vice-president)
Southern Equipment Co., St. Louis, Mo.
(Frank Muckler, secretary)
The Steel Products Eng. Co., Springfield, Ohio
(George Roundanez, sales manager)
Superior Furnace & Manufacturing Co., Plymouth, Mich.
(James H. Hinckley, president)
Turb-O-Tube Furnace Inc., Buffalo, N. Y.
(J. B. W. Carmichael, vice-president)
Tyler Stove & Enameling Co., Tyler, Texas
(V. F. Fitzhugh, secretary treasurer)
Van-Packer Corp., Chicago, Ill.
(L. P. Brown, vice-president)

Individual members

Marida, C. Adams, Conversions & Surveys Inc., New York, N. Y.
R. A. Anderson, Ingersoll Steel Div., Borg-Warner Corp., Kalamazoo, Mich.
A. P. Baker, Southern Union Gas Co., El Paso, Texas
Thomas D. Barbour, Gas Consumers Association, Columbus, Ohio
G. Albert Bittner, Public Service Electric & Gas Co., Jersey City, N. J.
Ernest Basil Blease, H. Zinder & Associates, Washington, D. C.
A. B. Brown, Southern Indiana Gas & Electric Co., Evansville, Ind.
Robert Stewart Bruns, Jr., Transcontinental Gas Pipe Line Co., New York, N. Y.
J. Robert Buford, North Penn Gas Co., Port Allegany, Pa.
Edward N. Button, Koppers Co., Inc., Philadelphia, Pa.
William C. Cameron, Pacific Public Service Co., Pittsburg, Calif.
Richard W. Carver, Syracuse Suburban Gas Co. Inc., East Syracuse, N. Y.
James R. Cochran, Public Service Electric & Gas Co., Newark, N. J.
Francis H. Condon, Norge Div., Borg-Warner Corp., Effingham, Ill.
W. M. Couzens, 2040 Verdugo Knolls Drive, Glendale, Calif.
John Powell Crowley, The Greenwich Gas Co., Greenwich, Conn.
George Scott Cuming, Michigan-Wisconsin Pipe Line Co., Detroit, Mich.
Ralph D. Davis, Long Island Lighting Co., Garden City, N. Y.
Robert Dulaney, The Philadelphia Gas Works Co., Woodbury, N. J.
Donald G. Espey, Esso Standard Oil Co., New York, N. Y.
E. L. Estes, E. L. Estes Manufacturing Co., Shawnee, Okla.
Stanton S. Faville, Michigan-Wisconsin Pipe Line Co., Detroit, Mich.
W. J. Field, Columbia Steel Co., Los Angeles
Kendall H. Flint, Ingersoll Steel Div., Borg-Warner Corp., Kalamazoo, Mich.
Fred R. Grice, Michigan-Wisconsin Pipe Line Co., Detroit, Mich.
Francis D. Hackett, Boston Consolidated Gas Co., Boston, Mass.
Edmund J. Harig, The East Ohio Gas Co., Massillon, Ohio
Edward W. Herrmann, American Cast Iron Pipe Co., New York, N. Y.
Alfred L. Higgins, Boston Consolidated Gas Co., Jamaica Plain, Mass.
Orlo B. Holman, The Philadelphia Gas Works Co., Willow Grove, Pa.
T. Fred Holtham, New York State Electric & Gas Corp., Ithaca, N. Y.
Walter Kenneth Huggler, Camden Coke Plant, Public Service Electric & Gas Co., Camden, N. J.
T. J. Kean, Jr., The Harrisburg Gas Co., Harrisburg, Pa.
Robert W. Kelley, Michigan Consolidated Gas Co., Detroit, Mich.
George M. Kirkpatrick, Bradshaw & Co., Pittsburgh, Pa.
Eugene J. Kuhns, Allentown-Bethlehem Gas Co., Allentown, Pa.
John C. Lane, Institute of Gas Technology, Chicago, Ill.
James Montgomery Lane, Public Service Electric & Gas Co., Newark, N. J.
Eugene Carlton Logan, Trenton Gas Works, Trenton, N. J.
Andrew Lovretin, Jr., Public Service Electric & Gas Co. Newark, N. J.
Hugh McKellar, Pacific Gas & Electric Co., Berkeley, Calif.
Claude F. Machen, Boston Consolidated Gas Co., Boston, Mass.
Leonard W. Maynard, Public Service Electric & Gas Co., Newark, N. J.
John C. Mueller, Rheem Manufacturing Co., South Gate, Calif.
M. L. Mueller, Chimney Furnace Corp., Rockville, Md.
Darrell F. Neville, Pacific Gas & Electric Co., Albany, Calif.
J. Robert O'Keefe, Boston Consolidated Gas Co., Boston, Mass.
Edward J. O'Neill, Consolidated Edison Co. of N. Y., Inc., New York, N. Y.
Hans Otto, Otto Construction Corp., New York, N. Y.
Ildo Pasqualine, Public Service Electric & Gas Co., Camden, N. J.
J. W. Pavelko, Esso Standard Oil (Caribbean) S. A., Kingston, Jamaica
George H. Peachey, Jr., Boston Consolidated Gas Co., Boston, Mass.
Leo A. Peachey, Boston Consolidated Gas Co., Boston, Mass.
William F. Pelletier, Kaiser Steel Corp., New York, N. Y.
Richard D. Pennstrom, Gas Consumers Association, Long Island, N. Y.
O. G. Peterson, New York State Electric & Gas Corp., Ithaca, N. Y.
Philip M. Platten, Gas Consumers Association, Cleveland, Ohio
Mark Posey, Gas Consumers Association, Long Island, N. Y.
Samuel C. Pruett, Jr., Public Service Electric & Gas Co., Hackensack, N. J.
Marvin F. Regula, The East Ohio Gas Co., Dover, Ohio
S. E. Sentell, Jr., Texas Eastern Transmission Corp., Shreveport, La.
Gereld K. Shick, Southern Counties Gas Co., Indio, Calif.
W. W. Sill, Esso Standard Oil (Caribbean) S. A., Cuidad Trujillo, Dominican Republic

Victor W. Stanton, South Eastern Board, Surrey, England
Francis Strigh, The Bridgeport Gas Light Co., Bridgeport, Conn.
Ralph D. Terhune, The Bryant Heater Div., A. G. E. Inc., Ridgewood, N. J.
Robert F. Thursdale, Michigan-Wisconsin Pipe Line Co., Detroit, Mich.
Constantine Louis Tsaros, Institute of Gas Technology, Chicago, Ill.
Curtis H. Weissinger, Norton Co., Worcester, Mass.
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T. D. Williamson, T. D. Williamson, Inc., Tulsa, Okla.
Herbert Wirshing, 4014½ W. 7th St., Los Angeles, Calif.
James William Young, Imperial Oil Limited, Calgary, Alberta, Canada
Raymond J. Young, Gas Consumers Association, Cincinnati, Ohio

Research conference

(Continued from page 20)

Domestic Gas Research, presided over the clinic and question-and-answer periods of the first day, and William R. Teller, on the second day. John W. Farran, chairman, A. G. A. Technical Advisory Group for Domestic Gas Water Heating Research, led the discussions on new developments in the water heating field. L. T. Tegler, A. O. Smith Corp., and A. A. Kampman of the Laboratories participated. Dr. Robert C. Weast, Case Institute of Technology, discussed results of research on the internal corrosion of hot water heater storage tanks.

An extensive review of activities conducted by A. G. A. Committee on Comparison of Competitive Services was given by G. C. Beck, chairman of the committee. Mr. Beck pointed out that competitively, the race between gas and electric appliances at present is neck-and-neck with each side excelling in some performance aspects.

Conclusive data resulting from both laboratory and field tests have been gathered in the range field to show a two Btu to one Btu gas-to-electric energy ratio, he said. This is for ranges with one gas top burner pilot. While most published data on domestic ranges has shown equal meat shrinkage, a decided advantage for gas was found when restaurant type range ovens were employed at the Laboratories, he reported.

On the whole, domestic gas ranges are easier to cook with, easier to clean and have infinite top burner adjustments. Mr. Beck suggested that when electrical competitors claim faster top burner performance, gas men challenge them to "see who can sit on each other's burner the longest."

A film produced by Minneapolis Gas Light Company was shown to illustrate the advantages that would result from building appliances so that they would be easier to service. The film was explained by Arthur Ahlquist and C. George Segeler, A. G. A. utilization engineer.

John R. Beccia, The Connecticut Light and Power Co., discussed the problem of reducing service costs, pointing out that the serviceman's tool bag has grown heavier and heavier due to the number of tools he has to carry.

Mr. Segeler noted that several communities have adopted new codes which follow the suggestion made last year that such codes merely state that appliances shall be safe and then refer to various national standards by reference. He also announced that agreement had been reached by A. G. A. and National Fire Protection Association on requirements for installation of gas piping and gas appliances in buildings. The new text is expected to be adopted by American Standards Association as an American Standard.

Mr. Segeler also pointed out that a new document of the Public Housing Authority, Bulletin LR-11, discriminates against gas unfairly and should be fought by all utilities. He said that he did not believe that the discrimination was intentional but rather resulted from lack of proper information and its interpretation.

New appliances in the home—namely clothes dryers, incinerators, external vented heaters taking air from outside the house, and air conditioning units, were discussed in a panel led by Leon Ourusoff, manager of utilization, Washington Gas Light Co., Washington, D. C. Participating were C. S. O'Neil, Hamilton Manufacturing Co.; T. H. Landgraf, Autogas Co.; Allan W. Lundstrum, South Wind Division of Stewart-Warner Corp., and John Davidson, Servel, Inc.

Delegates to the conference came from 27 states, two Canadian provinces, and the District of Columbia. Representatives of A. G. A. Laboratories, Battelle Memorial Institute, Case Institute of Technology, Institute of Gas Technology, and University of Illinois, were present at the conference for consultation.

CONVENTION CALENDAR

1950

JUNE

19-20 •Michigan Gas Association, Grand Hotel, Mackinac Island, Mich.
19-20 •A. G. A. New York-New Jersey Regional Gas Sales Conference, Essex & Sussex Hotel, Spring Lake, New Jersey
19-24 •Canadian Gas Association, annual convention, Manoir Richelieu Hotel, Murray Bay, Province of Quebec, Canada

JULY

31-August 3 •Pacific Coast Gas Association, annual meeting, Hotel Olympic, Seattle, Wash.

SEPTEMBER

8 •New Jersey Gas Association, annual meeting, Monmouth Hotel, Spring Lake, N. J.
14-15 •Mid-West Gas Association, gas school and conference, Ames, Iowa
18-20 •A. G. A. Accident Prevention Conference, Wardman Park Hotel, Washington, D. C.

OCTOBER

2-6 •**A. G. A. Annual Convention, Atlantic City, N. J.; GAMA Exposition of Gas Appliances and Equipment, auditorium, Atlantic City**
4-5 •Texas Mid-Continent Oil and Gas Association, Dallas, Texas
23-27 •National Metal Exposition, Amphitheatre, Chicago, Ill. (A. G. A. will exhibit)

NOVEMBER

6-10 •National Hotel Exposition, Grand Central Palace, New York, N. Y. (A. G. A. will exhibit)
8-10 •Wisconsin Utilities Association, gas and electric section convention, Schroeder Hotel, Milwaukee, Wis.
27-28 •Joint A.G.A.-SGA Employee Relations Conference, New Orleans, La.

1951

MARCH

12-14 •Mid-West Gas Association, Hotel Fontenelle, Omaha, Neb.
19-21 •GAMA, annual meeting, The Homestead, Hot Springs, Va.
29-30 •New England Gas Association, annual meeting, Hotel Statler, Boston

APRIL

2-4 •A. G. A. Sales Conference on Industrial and Commercial Gas, Industrial and Commercial Gas Section, Sheraton Hotel, Washington, D. C.
9-11 •A. G. A. Mid-West Regional Gas Sales Conference, Residential Gas Section, Edgewater Beach Hotel, Chicago, Ill.
16-18 •A. G. A. Distribution, Motor Vehicles and Corrosion Conference, Hotel Peabody, Memphis, Tenn.

Personnel service

SERVICES OFFERED

Recent graduate (B.M.E.) C.C.N.Y.—Desires opportunity for trainee position in **Production** or **Development** work in gas industry. Prefer eastern area. (21) **1648.**

Engineer—Desires position with future. Willing to start in any capacity for which my training fits me. Eastern location preferred, but willing to travel. (B.M.E.), January 1950. **1649.**

Engineer—Staff Gas Engineer large consulting engineering organization presently engaged in transmission and distribution gas system design and other phases of the gas industry. Changeover experience. Seeks operating opening utility company. Professional Engineer. (B.M.E.)—(40). **1650.**

Junior Engineer—B.M.E., February 1950, top 10% of class, Tau Beta Pi. Ambitious, conscientious, young man (presently employed) desires future in production or distribution end of gas industry in Metropolitan area, N.Y.C. Attending Columbia University for M.S. in M.E. evenings. **1651**

POSITIONS OPEN

Engineer—Experienced in residential, commercial and industrial **gas surveys** with ability to prepare economic reports on new distribution systems. Reports and surveys to be used in financing feasible projects. Only those with technical education and experience need apply. Location in South Central United States with established consulting firm. Write stating personal history, previous experience, references and salary expected. **0578.**

California utility wants **Assistant** to **Chief Accountant.** Experience, general accounting (utility desirable). Supervisory experience, I.B.M. activities. Write giving full particulars. **0579.**

Assistant to **Executive** in charge of rates, large natural gas system operating in Appalachian area. Engineering graduate under 45. Experience in rate case work before State and Federal commissions, development of rate structures, contract negotiations. New York City headquarters. Unique opportunity for right man having the necessary professional and personal qualifications. Write complete details of background and experience. Also state references and salary required. **0581.**

Gas Combustion Engineer—Large Eastern manufacturer desires services of an experienced gas engineer to develop gas burners and heating equipment. College graduate preferred. This position offers a permanent position with excellent opportunities. In reply, please give resumé of experience and salary desired. **0582**

Manager Gas Utility Property in East. Experienced. Give resumé. **0583**

Service Superintendent—Must have actual experience servicing commercial gas appliances as well as ability to direct men. Probable location Chicago, after training. Apply by mail, stating age, experience, starting pay. **0584**

Earning requirements

(Continued from page 26)

for one of the larger gas companies, I found that these fixed customer charges averaged over $2.60 a month per customer. The monthly minimum charge in the rate, however, was only 80 cents.

Did that mean that the minimum should be increased to $2.60? Not at all! The company in question was operating in competition with a local electric utility which had the advantage of cheap water power, and any substantial increase in the early blocks of the gas rate would serve simply to drive existing cooking and water heating customers to electricity. Yet the costs had to be recovered if the company was to maintain adequate over-all earnings. The problem was solved by spreading some of these customer costs over the rates for space heating, where the value of the service was in excess of the cost.

Thus, although cost is ordinarily the sound criterion for minimum rates when the cost is not greater than the value of the service, value becomes the controlling factor when value is less than cost. It follows that in some cases, such as I have just illustrated, it may be necessary where several classes of service are supplied, to adjust the rates so that each class standing alone meets the test of value in accordance with Mr. Newton's third requirement, whereas the aggregate revenue of the classes combined covers the aggregate of all the costs. By the same token, value will still determine the ceiling for the aggregate of the classes. It is vital that all of these relationships be clearly identified and recognized in the determination of the respective rate levels.

Now, a few thoughts on the general subject of rate design. In most companies rates have tended to grow up like Topsy, without much plan, shaped primarily by the exigencies of each situation as it arose over the years. When changes have been made, they usually have been for the purpose of increasing or decreasing total revenues. In such cases it always seems easier to make uniform adjustments, so as leave the spreads between individual schedules relatively undisturbed.

I do not criticize utility executives for this approach, since I know from experience the trouble one can get into by trying to correct inequities between rates. The fact that one class of customers has been served for years at an unreasonably low charge would seem to be the poorest excuse in the world for not correcting the rate. Nevertheless those customers are the very ones who complain the loudest when an increase is suggested.

However, I know from experience that such changes can be made successfully if the customers are properly sold on the fairness of the proposals, and if the amounts involved are reasonable. In some cases this can be accomplished only by a comprehensive rate program carried out over a period of years so as to minimize the impact of what would otherwise be a too drastic single shot adjustment.

Thus, you should break away from outmoded rate inheritances and substitute new and modernized schedules which are more nearly in harmony with the costs and values associated with the various classes of business served. I suggest, for example, the possibility of some kind of a fixed charge in rates for space heating which will more nearly reflect the fixed annual costs in supplying that service.

Consider also the merits of winter-summer rate differentials to promote the use of air conditioning by your regular residential and commercial customers who will not do a disappearing act with each drop in the price of fuel oil. Where you have serious electric power competition, think about inclusion of a block of free gas in the fixed charge for space heating, so as to encourage the addition of high load factor, cooking, water heating and refrigeration business.

Finally, how about optional seasonal billings which spread the cost of space heating over a full year, or even two years, so as to reduce the revenue fluctuations associated with unusual weather conditions?

As I stated before, it seems to me that every utility rate problem is an individual problem. But on a broad basis, you will do well to steer fairly close to Frank Newton's fundamental criteria. Unless over-all earnings meet the test of adequacy and the level of class charges reasonably conforms to class costs and the competitive value of the service, it is almost impossible to avoid a long-term deterioration in your financial condition and a consequent impairment in your ability to render good service to the public.

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